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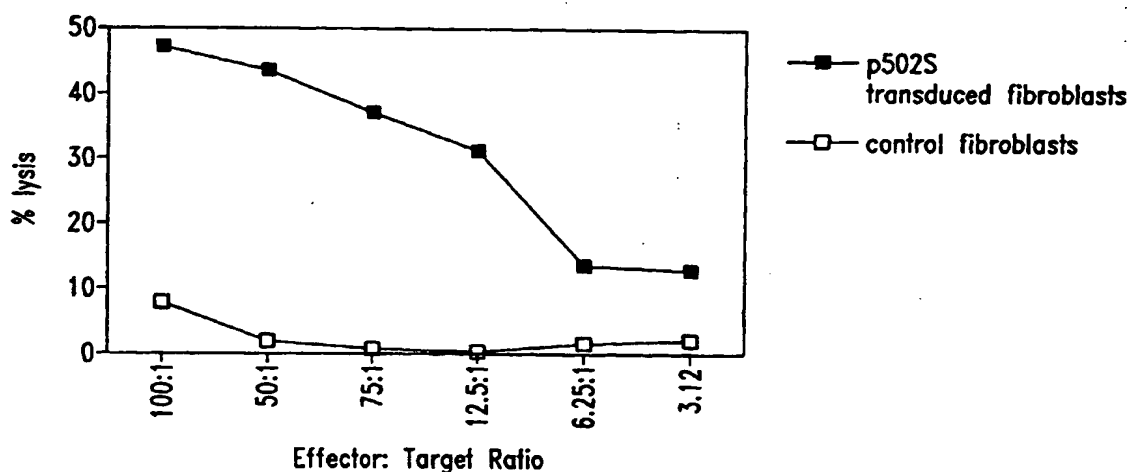
(43) International Publication Date  
12 April 2001 (12.04.2001)

PCT

(10) International Publication Number  
**WO 01/25272 A2**

- (51) International Patent Classification<sup>7</sup>: **C07K 14/00**
- (21) International Application Number: **PCT/US00/27464**
- (22) International Filing Date: **4 October 2000 (04.10.2000)**
- (25) Filing Language: **English**
- (26) Publication Language: **English**
- (30) Priority Data:  
**60/157,455**      **4 October 1999 (04.10.1999)**      **US**
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- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).
- Published:**  
— Without international search report and to be republished upon receipt of that report.
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: **COMPOSITIONS AND METHODS FOR THERAPY AND DIAGNOSIS OF PROSTATE CANCER**



(57) Abstract: Compositions and methods for the therapy and diagnosis of cancer, such as prostate cancer, are disclosed. Compositions may comprise one or more prostate tumor proteins, immunogenic portions thereof, or polynucleotides that encode such portions. Alternatively, a therapeutic composition may comprise an antigen presenting cell that expresses a prostate tumor protein, or a T cell that is specific for cells expressing such a protein. Such compositions may be used, for example, for the prevention and treatment of diseases such as prostate cancer. Diagnostic methods based on detecting a prostate tumor protein, or mRNA encoding such a protein, in a sample are also provided.

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## COMPOSITIONS AND METHODS FOR THERAPY AND DIAGNOSIS OF PROSTATE CANCER

### TECHNICAL FIELD

The present invention relates generally to therapy and diagnosis of cancer, such as prostate cancer. The invention is more specifically related to polypeptides comprising at least a portion of a prostate tumor protein, and to polynucleotides encoding such polypeptides. Such polypeptides and polynucleotides may be used in vaccines and pharmaceutical compositions for prevention and treatment of prostate cancer, and for the diagnosis and monitoring of such cancers.

### BACKGROUND OF THE INVENTION

Prostate cancer is the most common form of cancer among males, with an estimated incidence of 30% in men over the age of 50. Overwhelming clinical evidence shows that human prostate cancer has the propensity to metastasize to bone, and the disease appears to progress inevitably from androgen dependent to androgen refractory status, leading to increased patient mortality. This prevalent disease is currently the second leading cause of cancer death among men in the U.S.

In spite of considerable research into therapies for the disease, prostate cancer remains difficult to treat. Commonly, treatment is based on surgery and/or radiation therapy, but these methods are ineffective in a significant percentage of cases. Two previously identified prostate specific proteins - prostate specific antigen (PSA) and prostatic acid phosphatase (PAP) - have limited therapeutic and diagnostic potential. For example, PSA levels do not always correlate well with the presence of prostate cancer, being positive in a percentage of non-prostate cancer cases, including benign prostatic hyperplasia (BPH). Furthermore, PSA measurements correlate with prostate volume, and do not indicate the level of metastasis.

In spite of considerable research into therapies for these and other cancers, prostate cancer remains difficult to diagnose and treat effectively. Accordingly, there is a need in the art for improved methods for detecting and treating

such cancers. The present invention fulfills these needs and further provides other related advantages.

## SUMMARY OF THE INVENTION

Briefly stated, the present invention provides compositions and methods for the diagnosis and therapy of cancer, such as prostate cancer. In one aspect, the present invention provides polypeptides comprising at least a portion of a prostate tumor protein, or a variant thereof. Certain portions and other variants are immunogenic, such that the ability of the variant to react with antigen-specific antisera is not substantially diminished. Within certain embodiments, the polypeptide comprises at least an immunogenic portion of a prostate tumor protein, or a variant thereof, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of: (a) sequences recited in any one of SEQ ID NOs:1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 or 384-472; (b) sequences that hybridize to any of the foregoing sequences under moderately stringent conditions; and (c) complements of any of the sequence of (a) or (b). In certain specific embodiments, such a polypeptide comprises at least a portion, or variant thereof, of a tumor protein that includes an amino acid sequence selected from the group consisting of sequences recited in any one of SEQ ID NO: 112-114, 172, 176, 178, 327, 329, 331, 336, 339, 376-380 and 383.

The present invention further provides polynucleotides that encode a polypeptide as described above, or a portion thereof (such as a portion encoding at least 15 amino acid residues of a prostate tumor protein), expression vectors comprising such polynucleotides and host cells transformed or transfected with such expression vectors.

Within other aspects, the present invention provides pharmaceutical compositions comprising a polypeptide or polynucleotide as described above and a physiologically acceptable carrier.

Within a related aspect of the present invention, vaccines are provided. Such vaccines comprise a polypeptide or polynucleotide as described above and a non-specific immune response enhancer.

The present invention further provides pharmaceutical compositions that comprise: (a) an antibody or antigen-binding fragment thereof that specifically binds to a prostate tumor protein; and (b) a physiologically acceptable carrier.

Within further aspects, the present invention provides pharmaceutical compositions comprising: (a) an antigen presenting cell that expresses a polypeptide as described above and (b) a pharmaceutically acceptable carrier or excipient. Antigen presenting cells include dendritic cells, macrophages, monocytes, fibroblasts and B cells.

Within related aspects, vaccines are provided that comprise: (a) an antigen presenting cell that expresses a polypeptide as described above and (b) a non-specific immune response enhancer.

The present invention further provides, in other aspects, fusion proteins that comprise at least one polypeptide as described above, as well as polynucleotides encoding such fusion proteins.

Within related aspects, pharmaceutical compositions comprising a fusion protein, or a polynucleotide encoding a fusion protein, in combination with a physiologically acceptable carrier are provided.

Vaccines are further provided, within other aspects, that comprise a fusion protein, or a polynucleotide encoding a fusion protein, in combination with a non-specific immune response enhancer.

Within further aspects, the present invention provides methods for inhibiting the development of a cancer in a patient, comprising administering to a patient a pharmaceutical composition or vaccine as recited above.

The present invention further provides, within other aspects, methods for removing tumor cells from a biological sample, comprising contacting a biological sample with T cells that specifically react with a prostate tumor protein, wherein the step of contacting is performed under conditions and for a time sufficient to permit the removal of cells expressing the protein from the sample.



Within related aspects, methods are provided for inhibiting the development of a cancer in a patient, comprising administering to a patient a biological sample treated as described above.

Methods are further provided, within other aspects, for stimulating and/or expanding T cells specific for a prostate tumor protein, comprising contacting T cells with one or more of: (i) a polypeptide as described above; (ii) a polynucleotide encoding such a polypeptide; and/or (iii) an antigen presenting cell that expresses such a polypeptide; under conditions and for a time sufficient to permit the stimulation and/or expansion of T cells. Isolated T cell populations comprising T cells prepared as described above are also provided.

Within further aspects, the present invention provides methods for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of a T cell population as described above.

The present invention further provides methods for inhibiting the development of a cancer in a patient, comprising the steps of: (a) incubating CD4<sup>+</sup> and/or CD8<sup>+</sup> T cells isolated from a patient with one or more of: (i) a polypeptide comprising at least an immunogenic portion of a prostate tumor protein; (ii) a polynucleotide encoding such a polypeptide; and (iii) an antigen-presenting cell that expressed such a polypeptide; and (b) administering to the patient an effective amount of the proliferated T cells, and thereby inhibiting the development of a cancer in the patient. Proliferated cells may, but need not, be cloned prior to administration to the patient.

Within further aspects, the present invention provides methods for determining the presence or absence of a cancer in a patient, comprising: (a) contacting a biological sample obtained from a patient with a binding agent that binds to a polypeptide as recited above; (b) detecting in the sample an amount of polypeptide that binds to the binding agent; and (c) comparing the amount of polypeptide with a predetermined cut-off value, and therefrom determining the presence or absence of a cancer in the patient. Within preferred embodiments, the binding agent is an antibody, more preferably a monoclonal antibody. The cancer may be prostate cancer.

The present invention also provides, within other aspects, methods for monitoring the progression of a cancer in a patient. Such methods comprise the steps of: (a) contacting a biological sample obtained from a patient at a first point in time with a binding agent that binds to a polypeptide as recited above; (b) detecting in the sample an amount of polypeptide that binds to the binding agent; (c) repeating steps (a) and (b) using a biological sample obtained from the patient at a subsequent point in time; and (d) comparing the amount of polypeptide detected in step (c) with the amount detected in step (b) and therefrom monitoring the progression of the cancer in the patient.

The present invention further provides, within other aspects, methods for determining the presence or absence of a cancer in a patient, comprising the steps of: (a) contacting a biological sample obtained from a patient with an oligonucleotide that hybridizes to a polynucleotide that encodes a prostate tumor protein; (b) detecting in the sample a level of a polynucleotide, preferably mRNA, that hybridizes to the oligonucleotide; and (c) comparing the level of polynucleotide that hybridizes to the oligonucleotide with a predetermined cut-off value, and therefrom determining the presence or absence of a cancer in the patient. Within certain embodiments, the amount of mRNA is detected via polymerase chain reaction using, for example, at least one oligonucleotide primer that hybridizes to a polynucleotide encoding a polypeptide as recited above, or a complement of such a polynucleotide. Within other embodiments, the amount of mRNA is detected using a hybridization technique, employing an oligonucleotide probe that hybridizes to a polynucleotide that encodes a polypeptide as recited above, or a complement of such a polynucleotide.

In related aspects, methods are provided for monitoring the progression of a cancer in a patient, comprising the steps of: (a) contacting a biological sample obtained from a patient with an oligonucleotide that hybridizes to a polynucleotide that encodes a prostate tumor protein; (b) detecting in the sample an amount of a polynucleotide that hybridizes to the oligonucleotide; (c) repeating steps (a) and (b) using a biological sample obtained from the patient at a subsequent point in time; and (d) comparing the amount of polynucleotide detected in step (c) with the amount

detected in step (b) and therefrom monitoring the progression of the cancer in the patient.

Within further aspects, the present invention provides antibodies, such as monoclonal antibodies, that bind to a polypeptide as described above, as well as diagnostic kits comprising such antibodies. Diagnostic kits comprising one or more oligonucleotide probes or primers as described above are also provided.

These and other aspects of the present invention will become apparent upon reference to the following detailed description and attached drawings. All references disclosed herein are hereby incorporated by reference in their entirety as if each was incorporated individually.

#### BRIEF DESCRIPTION OF THE DRAWINGS AND SEQUENCE IDENTIFIERS

Figure 1 illustrates the ability of T cells to kill fibroblasts expressing the representative prostate tumor polypeptide P502S, as compared to control fibroblasts. The percentage lysis is shown as a series of effector:target ratios, as indicated.

Figures 2A and 2B illustrate the ability of T cells to recognize cells expressing the representative prostate tumor polypeptide P502S. In each case, the number of  $\gamma$ -interferon spots is shown for different numbers of responders. In Figure 2A, data is presented for fibroblasts pulsed with the P2S-12 peptide, as compared to fibroblasts pulsed with a control E75 peptide. In Figure 2B, data is presented for fibroblasts expressing P502S, as compared to fibroblasts expressing HER-2/*neu*.

Figure 3 represents a peptide competition binding assay showing that the P1S#10 peptide, derived from P501S, binds HLA-A2. Peptide P1S#10 inhibits HLA-A2 restricted presentation of fluM58 peptide to CTL clone D150M58 in TNF release bioassay. D150M58 CTL is specific for the HLA-A2 binding influenza matrix peptide fluM58.

Figure 4 illustrates the ability of T cell lines generated from P1S#10 immunized mice to specifically lyse P1S#10-pulsed Jurkat A2Kb targets and P501S-transduced Jurkat A2Kb targets, as compared to EGFP-transduced Jurkat A2Kb. The percent lysis is shown as a series of effector to target ratios, as indicated.

Figure 5 illustrates the ability of a T cell clone to recognize and specifically lyse Jurkat A2Kb cells expressing the representative prostate tumor polypeptide P501S, thereby demonstrating that the P1S#10 peptide may be a naturally processed epitope of the P501S polypeptide.

Figures 6A and 6B are graphs illustrating the specificity of a CD8<sup>+</sup> cell line (3A-1) for a representative prostate tumor antigen (P501S). Figure 6A shows the results of a <sup>51</sup>Cr release assay. The percent specific lysis is shown as a series of effector:target ratios, as indicated. Figure 6B shows the production of interferon-gamma by 3A-1 cells stimulated with autologous B-LCL transduced with P501S, at varying effector:target ratios as indicated.

SEQ ID NO: 1 is the determined cDNA sequence for F1-13

SEQ ID NO: 2 is the determined 3' cDNA sequence for F1-12

SEQ ID NO: 3 is the determined 5' cDNA sequence for F1-12

SEQ ID NO: 4 is the determined 3' cDNA sequence for F1-16

SEQ ID NO: 5 is the determined 3' cDNA sequence for H1-1

SEQ ID NO: 6 is the determined 3' cDNA sequence for H1-9

SEQ ID NO: 7 is the determined 3' cDNA sequence for H1-4

SEQ ID NO: 8 is the determined 3' cDNA sequence for J1-17

SEQ ID NO: 9 is the determined 5' cDNA sequence for J1-17

SEQ ID NO: 10 is the determined 3' cDNA sequence for L1-12

SEQ ID NO: 11 is the determined 5' cDNA sequence for L1-12

SEQ ID NO: 12 is the determined 3' cDNA sequence for N1-1862

SEQ ID NO: 13 is the determined 5' cDNA sequence for N1-1862

SEQ ID NO: 14 is the determined 3' cDNA sequence for J1-13

SEQ ID NO: 15 is the determined 5' cDNA sequence for J1-13

SEQ ID NO: 16 is the determined 3' cDNA sequence for J1-19

SEQ ID NO: 17 is the determined 5' cDNA sequence for J1-19

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SEQ ID NO: 49 is the determined cDNA sequence for P36  
SEQ ID NO: 50 is the determined cDNA sequence for P38

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SEQ ID NO: 235 is the determined cDNA sequence for JPTPN34  
SEQ ID NO: 236 is the determined cDNA sequence for PTPN35  
SEQ ID NO: 237 is the determined cDNA sequence for JPTPN36  
SEQ ID NO: 238 is the determined cDNA sequence for JPTPN38  
SEQ ID NO: 239 is the determined cDNA sequence for JPTPN39  
SEQ ID NO: 240 is the determined cDNA sequence for JPTPN40  
SEQ ID NO: 241 is the determined cDNA sequence for JPTPN41  
SEQ ID NO: 242 is the determined cDNA sequence for JPTPN42  
SEQ ID NO: 243 is the determined cDNA sequence for JPTPN45  
SEQ ID NO: 244 is the determined cDNA sequence for JPTPN46  
SEQ ID NO: 245 is the determined cDNA sequence for JPTPN51  
SEQ ID NO: 246 is the determined cDNA sequence for JPTPN56  
SEQ ID NO: 247 is the determined cDNA sequence for PTPN64  
SEQ ID NO: 248 is the determined cDNA sequence for JPTPN65  
SEQ ID NO: 249 is the determined cDNA sequence for JPTPN67  
SEQ ID NO: 250 is the determined cDNA sequence for JPTPN76  
SEQ ID NO: 251 is the determined cDNA sequence for JPTPN84  
SEQ ID NO: 252 is the determined cDNA sequence for JPTPN85  
SEQ ID NO: 253 is the determined cDNA sequence for JPTPN86  
SEQ ID NO: 254 is the determined cDNA sequence for JPTPN87  
SEQ ID NO: 255 is the determined cDNA sequence for JPTPN88  
SEQ ID NO: 256 is the determined cDNA sequence for JP1F1  
SEQ ID NO: 257 is the determined cDNA sequence for JP1F2  
SEQ ID NO: 258 is the determined cDNA sequence for JP1C2

SEQ ID NO: 259 is the determined cDNA sequence for JP1B1  
SEQ ID NO: 260 is the determined cDNA sequence for JP1B2  
SEQ ID NO: 261 is the determined cDNA sequence for JP1D3  
SEQ ID NO: 262 is the determined cDNA sequence for JP1A4  
SEQ ID NO: 263 is the determined cDNA sequence for JP1F5  
SEQ ID NO: 264 is the determined cDNA sequence for JP1E6  
SEQ ID NO: 265 is the determined cDNA sequence for JP1D6  
SEQ ID NO: 266 is the determined cDNA sequence for JP1B5  
SEQ ID NO: 267 is the determined cDNA sequence for JP1A6  
SEQ ID NO: 268 is the determined cDNA sequence for JP1E8  
SEQ ID NO: 269 is the determined cDNA sequence for JP1D7  
SEQ ID NO: 270 is the determined cDNA sequence for JP1D9  
SEQ ID NO: 271 is the determined cDNA sequence for JP1C10  
SEQ ID NO: 272 is the determined cDNA sequence for JP1A9  
SEQ ID NO: 273 is the determined cDNA sequence for JP1F12  
SEQ ID NO: 274 is the determined cDNA sequence for JP1E12  
SEQ ID NO: 275 is the determined cDNA sequence for JP1D11  
SEQ ID NO: 276 is the determined cDNA sequence for JP1C11  
SEQ ID NO: 277 is the determined cDNA sequence for JP1C12  
SEQ ID NO: 278 is the determined cDNA sequence for JP1B12  
SEQ ID NO: 279 is the determined cDNA sequence for JP1A12  
SEQ ID NO: 280 is the determined cDNA sequence for JP8G2  
SEQ ID NO: 281 is the determined cDNA sequence for JP8H1  
SEQ ID NO: 282 is the determined cDNA sequence for JP8H2  
SEQ ID NO: 283 is the determined cDNA sequence for JP8A3  
SEQ ID NO: 284 is the determined cDNA sequence for JP8A4  
SEQ ID NO: 285 is the determined cDNA sequence for JP8C3  
SEQ ID NO: 286 is the determined cDNA sequence for JP8G4  
SEQ ID NO: 287 is the determined cDNA sequence for JP8B6  
SEQ ID NO: 288 is the determined cDNA sequence for JP8D6

SEQ ID NO: 289 is the determined cDNA sequence for JP8F5  
SEQ ID NO: 290 is the determined cDNA sequence for JP8A8  
SEQ ID NO: 291 is the determined cDNA sequence for JP8C7  
SEQ ID NO: 292 is the determined cDNA sequence for JP8D7  
SEQ ID NO: 293 is the determined cDNA sequence for P8D8  
SEQ ID NO: 294 is the determined cDNA sequence for JP8E7  
SEQ ID NO: 295 is the determined cDNA sequence for JP8F8  
SEQ ID NO: 296 is the determined cDNA sequence for JP8G8  
SEQ ID NO: 297 is the determined cDNA sequence for JP8B10  
SEQ ID NO: 298 is the determined cDNA sequence for JP8C10  
SEQ ID NO: 299 is the determined cDNA sequence for JP8E9  
SEQ ID NO: 300 is the determined cDNA sequence for JP8E10  
SEQ ID NO: 301 is the determined cDNA sequence for JP8F9  
SEQ ID NO: 302 is the determined cDNA sequence for JP8H9  
SEQ ID NO: 303 is the determined cDNA sequence for JP8C12  
SEQ ID NO: 304 is the determined cDNA sequence for JP8E11  
SEQ ID NO: 305 is the determined cDNA sequence for JP8E12  
SEQ ID NO: 306 is the amino acid sequence for the peptide PS2#12  
SEQ ID NO: 307 is the determined cDNA sequence for P711P  
SEQ ID NO: 308 is the determined cDNA sequence for P712P  
SEQ ID NO: 309 is the determined cDNA sequence for CLONE23  
SEQ ID NO: 310 is the determined cDNA sequence for P774P  
SEQ ID NO: 311 is the determined cDNA sequence for P775P  
SEQ ID NO: 312 is the determined cDNA sequence for P715P  
SEQ ID NO: 313 is the determined cDNA sequence for P710P  
SEQ ID NO: 314 is the determined cDNA sequence for P767P  
SEQ ID NO: 315 is the determined cDNA sequence for P768P  
SEQ ID NO: 316-325 are the determined cDNA sequences of previously isolated genes  
SEQ ID NO: 326 is the determined cDNA sequence for P703PDE5  
SEQ ID NO: 327 is the predicted amino acid sequence for P703PDE5

SEQ ID NO: 328 is the determined cDNA sequence for P703P6.26

SEQ ID NO: 329 is the predicted amino acid sequence for P703P6.26

SEQ ID NO: 330 is the determined cDNA sequence for P703PX-23

SEQ ID NO: 331 is the predicted amino acid sequence for P703PX-23

SEQ ID NO: 332 is the determined full length cDNA sequence for P509S

SEQ ID NO: 333 is the determined extended cDNA sequence for P707P (also referred to as 11-C9)

SEQ ID NO: 334 is the determined cDNA sequence for P714P

SEQ ID NO: 335 is the determined cDNA sequence for P705P (also referred to as 9-F3)

SEQ ID NO: 336 is the predicted amino acid sequence for P705P

SEQ ID NO: 337 is the amino acid sequence of the peptide P1S#10

SEQ ID NO: 338 is the amino acid sequence of the peptide p5

SEQ ID NO: 339 is the predicted amino acid sequence of P509S

SEQ ID NO: 340 is the determined cDNA sequence for P778P

SEQ ID NO: 341 is the determined cDNA sequence for P786P

SEQ ID NO: 342 is the determined cDNA sequence for P789P

SEQ ID NO: 343 is the determined cDNA sequence for a clone showing homology to Homo sapiens MM46 mRNA

SEQ ID NO: 344 is the determined cDNA sequence for a clone showing homology to Homo sapiens TNF-alpha stimulated ABC protein (ABC50) mRNA

SEQ ID NO: 345 is the determined cDNA sequence for a clone showing homology to Homo sapiens mRNA for E-cadherin

SEQ ID NO: 346 is the determined cDNA sequence for a clone showing homology to Human nuclear-encoded mitochondrial serine hydroxymethyltransferase (SHMT)

SEQ ID NO: 347 is the determined cDNA sequence for a clone showing homology to Homo sapiens natural resistance-associated macrophage protein2 (NRAMP2)

SEQ ID NO: 348 is the determined cDNA sequence for a clone showing homology to Homo sapiens phosphoglucomutase-related protein (PGMRP)

SEQ ID NO: 349 is the determined cDNA sequence for a clone showing homology to Human mRNA for proteosome subunit p40

SEQ ID NO: 350 is the determined cDNA sequence for P777P

SEQ ID NO: 351 is the determined cDNA sequence for P779P

SEQ ID NO: 352 is the determined cDNA sequence for P790P

SEQ ID NO: 353 is the determined cDNA sequence for P784P

SEQ ID NO: 354 is the determined cDNA sequence for P776P

SEQ ID NO: 355 is the determined cDNA sequence for P780P

SEQ ID NO: 356 is the determined cDNA sequence for P544S

SEQ ID NO: 357 is the determined cDNA sequence for P745S

SEQ ID NO: 358 is the determined cDNA sequence for P782P

SEQ ID NO: 359 is the determined cDNA sequence for P783P

SEQ ID NO: 360 is the determined cDNA sequence for unknown 17984

SEQ ID NO: 361 is the determined cDNA sequence for P787P

SEQ ID NO: 362 is the determined cDNA sequence for P788P

SEQ ID NO: 363 is the determined cDNA sequence for unknown 17994

SEQ ID NO: 364 is the determined cDNA sequence for P781P

SEQ ID NO: 365 is the determined cDNA sequence for P785P

SEQ ID NO: 366-375 are the determined cDNA sequences for splice variants of B305D.

SEQ ID NO: 376 is the predicted amino acid sequence encoded by the sequence of SEQ ID NO: 366.

SEQ ID NO: 377 is the predicted amino acid sequence encoded by the sequence of SEQ ID NO: 372.

SEQ ID NO: 378 is the predicted amino acid sequence encoded by the sequence of SEQ ID NO: 373.

SEQ ID NO: 379 is the predicted amino acid sequence encoded by the sequence of SEQ ID NO: 374.

SEQ ID NO: 380 is the predicted amino acid sequence encoded by the sequence of SEQ ID NO: 375.



SEQ ID NO: 381 is the determined cDNA sequence for B716P.  
SEQ ID NO: 382 is the determined full-length cDNA sequence for P711P.  
SEQ ID NO: 383 is the predicted amino acid sequence for P711P.  
SEQ ID NO: 384 is the cDNA sequence for P1000C.  
SEQ ID NO: 385 is the cDNA sequence for CGI-82.  
SEQ ID NO: 386 is the cDNA sequence for 23320.  
SEQ ID NO: 387 is the cDNA sequence for CGI-69.  
SEQ ID NO: 388 is the cDNA sequence for L-iditol-2-dehydrogenase.  
SEQ ID NO: 389 is the cDNA sequence for 23379.  
SEQ ID NO: 390 is the cDNA sequence for 23381.  
SEQ ID NO: 391 is the cDNA sequence for KIAA0122.  
SEQ ID NO: 392 is the cDNA sequence for 23399.  
SEQ ID NO: 393 is the cDNA sequence for a previously identified gene.  
SEQ ID NO: 394 is the cDNA sequence for HCLBP.  
SEQ ID NO: 395 is the cDNA sequence for transglutaminase.  
SEQ ID NO: 396 is the cDNA sequence for a previously identified gene.  
SEQ ID NO: 397 is the cDNA sequence for PAP.  
SEQ ID NO: 398 is the cDNA sequence for Ets transcription factor PDEF.  
SEQ ID NO: 399 is the cDNA sequence for hTGR.  
SEQ ID NO: 400 is the cDNA sequence for KIAA0295.  
SEQ ID NO: 401 is the cDNA sequence for 22545.  
SEQ ID NO: 402 is the cDNA sequence for 22547.  
SEQ ID NO: 403 is the cDNA sequence for 22548.  
SEQ ID NO: 404 is the cDNA sequence for 22550.  
SEQ ID NO: 405 is the cDNA sequence for 22551.  
SEQ ID NO: 406 is the cDNA sequence for 22552.  
SEQ ID NO: 407 is the cDNA sequence for 22553.  
SEQ ID NO: 408 is the cDNA sequence for 22558.  
SEQ ID NO: 409 is the cDNA sequence for 22562.  
SEQ ID NO: 410 is the cDNA sequence for 22565.

SEQ ID NO:411 is the cDNA sequence for 22567.  
SEQ ID NO:412 is the cDNA sequence for 22568.  
SEQ ID NO:413 is the cDNA sequence for 22570.  
SEQ ID NO:414 is the cDNA sequence for 22571.  
SEQ ID NO:415 is the cDNA sequence for 22572.  
SEQ ID NO:416 is the cDNA sequence for 22573.  
SEQ ID NO:417 is the cDNA sequence for 22573.  
SEQ ID NO:418 is the cDNA sequence for 22575.  
SEQ ID NO:419 is the cDNA sequence for 22580.  
SEQ ID NO:420 is the cDNA sequence for 22581.  
SEQ ID NO:421 is the cDNA sequence for 22582.  
SEQ ID NO:422 is the cDNA sequence for 22583.  
SEQ ID NO:423 is the cDNA sequence for 22584.  
SEQ ID NO:424 is the cDNA sequence for 22585.  
SEQ ID NO:425 is the cDNA sequence for 22586.  
SEQ ID NO:426 is the cDNA sequence for 22587.  
SEQ ID NO:427 is the cDNA sequence for 22588.  
SEQ ID NO:428 is the cDNA sequence for 22589.  
SEQ ID NO:429 is the cDNA sequence for 22590.  
SEQ ID NO:430 is the cDNA sequence for 22591.  
SEQ ID NO:431 is the cDNA sequence for 22592.  
SEQ ID NO:432 is the cDNA sequence for 22593.  
SEQ ID NO:433 is the cDNA sequence for 22594.  
SEQ ID NO:434 is the cDNA sequence for 22595.  
SEQ ID NO:435 is the cDNA sequence for 22596.  
SEQ ID NO:436 is the cDNA sequence for 22847.  
SEQ ID NO:437 is the cDNA sequence for 22848.  
SEQ ID NO:438 is the cDNA sequence for 22849.  
SEQ ID NO:439 is the cDNA sequence for 22851.  
SEQ ID NO:440 is the cDNA sequence for 22852.

SEQ ID NO:441 is the cDNA sequence for 22853.  
SEQ ID NO:442 is the cDNA sequence for 22854.  
SEQ ID NO:443 is the cDNA sequence for 22855.  
SEQ ID NO:444 is the cDNA sequence for 22856.  
SEQ ID NO:445 is the cDNA sequence for 22857.  
SEQ ID NO:446 is the cDNA sequence for 23601.  
SEQ ID NO:447 is the cDNA sequence for 23602.  
SEQ ID NO:448 is the cDNA sequence for 23605.  
SEQ ID NO:449 is the cDNA sequence for 23606.  
SEQ ID NO:450 is the cDNA sequence for 23612.  
SEQ ID NO:451 is the cDNA sequence for 23614.  
SEQ ID NO:452 is the cDNA sequence for 23618.  
SEQ ID NO:453 is the cDNA sequence for 23622.  
SEQ ID NO:454 is the cDNA sequence for folate hydrolase.  
SEQ ID NO:455 is the cDNA sequence for LIM protein.  
SEQ ID NO:456 is the cDNA sequence for a known gene.  
SEQ ID NO:457 is the cDNA sequence for a known gene.  
SEQ ID NO:458 is the cDNA sequence for a previously identified gene.  
SEQ ID NO:459 is the cDNA sequence for 23045.  
SEQ ID NO:460 is the cDNA sequence for 23032.  
SEQ ID NO:461 is the cDNA sequence for 23054.  
SEQ ID NOs:462-467 are cDNA sequences for known genes.  
SEQ ID NOs:468-471 are cDNA sequences for P710P.  
SEQ ID NO:472 is a cDNA sequence for P1001C.  
SEQ ID NO:473 is the amino acid sequence for PSMA.  
SEQ ID NO:474 is the amino acid sequence for PAP.  
SEQ ID NO:475 is the amino acid sequence for PSA.  
SEQ ID NO:476 is the amino acid sequence for a fusion protein containing PSA, P703P and P501S.

## DETAILED DESCRIPTION OF THE INVENTION

As noted above, the present invention is generally directed to compositions and methods for the therapy and diagnosis of cancer, such as prostate cancer. The compositions described herein may include prostate tumor polypeptides, polynucleotides encoding such polypeptides, binding agents such as antibodies, antigen presenting cells (APCs) and/or immune system cells (*e.g.*, T cells). Polypeptides of the present invention generally comprise at least a portion (such as an immunogenic portion) of a prostate tumor protein or a variant thereof. A "prostate tumor protein" is a protein that is expressed in prostate tumor cells at a level that is at least two fold, and preferably at least five fold, greater than the level of expression in a normal tissue, as determined using a representative assay provided herein. Certain prostate tumor proteins are tumor proteins that react detectably (within an immunoassay, such as an ELISA or Western blot) with antisera of a patient afflicted with prostate cancer. Polynucleotides of the subject invention generally comprise a DNA or RNA sequence that encodes all or a portion of such a polypeptide, or that is complementary to such a sequence. Antibodies are generally immune system proteins, or antigen-binding fragments thereof, that are capable of binding to a polypeptide as described above. Antigen presenting cells include dendritic cells, macrophages, monocytes, fibroblasts and B-cells that express a polypeptide as described above. T cells that may be employed within such compositions are generally T cells that are specific for a polypeptide as described above.

The present invention is based on the discovery of human prostate tumor proteins. Sequences of polynucleotides encoding certain tumor proteins, or portions thereof, are provided in SEQ ID NOs:1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 or 384-472. Sequences of polypeptides comprising at least a portion of a tumor protein are provided in SEQ ID NOs:112-114, 172, 176, 178, 327, 329, 331, 336, 339, 376-380 and 383.

## PROSTATE TUMOR PROTEIN POLYNUCLEOTIDES

Any polynucleotide that encodes a prostate tumor protein or a portion or other variant thereof as described herein is encompassed by the present invention. Preferred polynucleotides comprise at least 15 consecutive nucleotides, preferably at least 30 consecutive nucleotides and more preferably at least 45 consecutive nucleotides, that encode a portion of a prostate tumor protein. More preferably, a polynucleotide encodes an immunogenic portion of a prostate tumor protein. Polynucleotides complementary to any such sequences are also encompassed by the present invention. Polynucleotides may be single-stranded (coding or antisense) or double-stranded, and may be DNA (genomic, cDNA or synthetic) or RNA molecules. RNA molecules include HnRNA molecules, which contain introns and correspond to a DNA molecule in a one-to-one manner, and mRNA molecules, which do not contain introns. Additional coding or non-coding sequences may, but need not, be present within a polynucleotide of the present invention, and a polynucleotide may, but need not, be linked to other molecules and/or support materials.

Polynucleotides may comprise a native sequence (*i.e.*, an endogenous sequence that encodes a prostate tumor protein or a portion thereof) or may comprise a variant of such a sequence. Polynucleotide variants may contain one or more substitutions, additions, deletions and/or insertions such that the immunogenicity of the encoded polypeptide is not diminished, relative to a native tumor protein. The effect on the immunogenicity of the encoded polypeptide may generally be assessed as described herein. Variants preferably exhibit at least about 70% identity, more preferably at least about 80% identity and most preferably at least about 90% identity to a polynucleotide sequence that encodes a native prostate tumor protein or a portion thereof.

Two polynucleotide or polypeptide sequences are said to be "identical" if the sequence of nucleotides or amino acids in the two sequences is the same when aligned for maximum correspondence as described below. Comparisons between two sequences are typically performed by comparing the sequences over a comparison window to identify and compare local regions of sequence similarity. A "comparison window" as used herein, refers to a segment of at least about 20 contiguous positions,

usually 30 to about 75, 40 to about 50, in which a sequence may be compared to a reference sequence of the same number of contiguous positions after the two sequences are optimally aligned.

Optimal alignment of sequences for comparison may be conducted using the Megalign program in the Lasergene suite of bioinformatics software (DNASTAR, Inc., Madison, WI), using default parameters. This program embodies several alignment schemes described in the following references: Dayhoff, M.O. (1978) A model of evolutionary change in proteins – Matrices for detecting distant relationships. In Dayhoff, M.O. (ed.) *Atlas of Protein Sequence and Structure*, National Biomedical Research Foundation, Washington DC Vol. 5, Suppl. 3, pp. 345-358; Hein J. (1990) Unified Approach to Alignment and Phylogenies pp. 626-645 *Methods in Enzymology* vol. 183, Academic Press, Inc., San Diego, CA; Higgins, D.G. and Sharp, P.M. (1989) *CABIOS* 5:151-153; Myers, E.W. and Muller W. (1988) *CABIOS* 4:11-17; Robinson, E.D. (1971) *Comb. Theor* 11:105; Santou, N. Nes, M. (1987) *Mol. Biol. Evol.* 4:406-425; Sneath, P.H.A. and Sokal, R.R. (1973) *Numerical Taxonomy – the Principles and Practice of Numerical Taxonomy*, Freeman Press, San Francisco, CA; Wilbur, W.J. and Lipman, D.J. (1983) *Proc. Natl. Acad., Sci. USA* 80:726-730.

Preferably, the “percentage of sequence identity” is determined by comparing two optimally aligned sequences over a window of comparison of at least 20 positions, wherein the portion of the polynucleotide or polypeptide sequence in the comparison window may comprise additions or deletions (*i.e.*, gaps) of 20 percent or less, usually 5 to 15 percent, or 10 to 12 percent, as compared to the reference sequences (which does not comprise additions or deletions) for optimal alignment of the two sequences. The percentage is calculated by determining the number of positions at which the identical nucleic acid bases or amino acid residue occurs in both sequences to yield the number of matched positions, dividing the number of matched positions by the total number of positions in the reference sequence (*i.e.*, the window size) and multiplying the results by 100 to yield the percentage of sequence identity.

Variants may also, or alternatively, be substantially homologous to a native gene, or a portion or complement thereof. Such polynucleotide variants are

capable of hybridizing under moderately stringent conditions to a naturally occurring DNA sequence encoding a native prostate tumor protein (or a complementary sequence). Suitable moderately stringent conditions include prewashing in a solution of 5 X SSC, 0.5% SDS, 1.0 mM EDTA (pH 8.0); hybridizing at 50°C-65°C, 5 X SSC, overnight; followed by washing twice at 65°C for 20 minutes with each of 2X, 0.5X and 0.2X SSC containing 0.1% SDS.

It will be appreciated by those of ordinary skill in the art that, as a result of the degeneracy of the genetic code, there are many nucleotide sequences that encode a polypeptide as described herein. Some of these polynucleotides bear minimal homology to the nucleotide sequence of any native gene. Nonetheless, polynucleotides that vary due to differences in codon usage are specifically contemplated by the present invention. Further, alleles of the genes comprising the polynucleotide sequences provided herein are within the scope of the present invention. Alleles are endogenous genes that are altered as a result of one or more mutations, such as deletions, additions and/or substitutions of nucleotides. The resulting mRNA and protein may, but need not, have an altered structure or function. Alleles may be identified using standard techniques (such as hybridization, amplification and/or database sequence comparison).

Polynucleotides may be prepared using any of a variety of techniques. For example, a polynucleotide may be identified, as described in more detail below, by screening a microarray of cDNAs for tumor-associated expression (*i.e.*, expression that is at least five fold greater in a prostate tumor than in normal tissue, as determined using a representative assay provided herein). Such screens may be performed using a Synteni microarray (Palo Alto, CA) according to the manufacturer's instructions (and essentially as described by Schena et al., *Proc. Natl. Acad. Sci. USA* 93:10614-10619, 1996 and Heller et al., *Proc. Natl. Acad. Sci. USA* 94:2150-2155, 1997). Alternatively, polypeptides may be amplified from cDNA prepared from cells expressing the proteins described herein, such as prostate tumor cells. Such polynucleotides may be amplified via polymerase chain reaction (PCR). For this approach, sequence-specific primers may be designed based on the sequences provided herein, and may be purchased or synthesized.

An amplified portion may be used to isolate a full length gene from a suitable library (e.g., a prostate tumor cDNA library) using well known techniques. Within such techniques, a library (cDNA or genomic) is screened using one or more polynucleotide probes or primers suitable for amplification. Preferably, a library is size-selected to include larger molecules. Random primed libraries may also be preferred for identifying 5' and upstream regions of genes. Genomic libraries are preferred for obtaining introns and extending 5' sequences.

For hybridization techniques, a partial sequence may be labeled (e.g., by nick-translation or end-labeling with  $^{32}\text{P}$ ) using well known techniques. A bacterial or bacteriophage library is then screened by hybridizing filters containing denatured bacterial colonies (or lawns containing phage plaques) with the labeled probe (see Sambrook et al., *Molecular Cloning: A Laboratory Manual*, Cold Spring Harbor Laboratories, Cold Spring Harbor, NY, 1989). Hybridizing colonies or plaques are selected and expanded, and the DNA is isolated for further analysis. cDNA clones may be analyzed to determine the amount of additional sequence by, for example, PCR using a primer from the partial sequence and a primer from the vector. Restriction maps and partial sequences may be generated to identify one or more overlapping clones. The complete sequence may then be determined using standard techniques, which may involve generating a series of deletion clones. The resulting overlapping sequences are then assembled into a single contiguous sequence. A full length cDNA molecule can be generated by ligating suitable fragments, using well known techniques.

Alternatively, there are numerous amplification techniques for obtaining a full length coding sequence from a partial cDNA sequence. Within such techniques, amplification is generally performed via PCR. Any of a variety of commercially available kits may be used to perform the amplification step. Primers may be designed using, for example, software well known in the art. Primers are preferably 22-30 nucleotides in length, have a GC content of at least 50% and anneal to the target sequence at temperatures of about 68°C to 72°C. The amplified region may be sequenced as described above, and overlapping sequences assembled into a contiguous sequence.



One such amplification technique is inverse PCR (*see* Triglia et al., *Nucl. Acids Res.* 16:8186, 1988), which uses restriction enzymes to generate a fragment in the known region of the gene. The fragment is then circularized by intramolecular ligation and used as a template for PCR with divergent primers derived from the known region. Within an alternative approach, sequences adjacent to a partial sequence may be retrieved by amplification with a primer to a linker sequence and a primer specific to a known region. The amplified sequences are typically subjected to a second round of amplification with the same linker primer and a second primer specific to the known region. A variation on this procedure, which employs two primers that initiate extension in opposite directions from the known sequence, is described in WO 96/38591. Another such technique is known as "rapid amplification of cDNA ends" or RACE. This technique involves the use of an internal primer and an external primer, which hybridizes to a polyA region or vector sequence, to identify sequences that are 5' and 3' of a known sequence. Additional techniques include capture PCR (Lagerstrom et al., *PCR Methods Applic.* 1:111-19, 1991) and walking PCR (Parker et al., *Nucl. Acids Res.* 19:3055-60, 1991). Other methods employing amplification may also be employed to obtain a full length cDNA sequence.

In certain instances, it is possible to obtain a full length cDNA sequence by analysis of sequences provided in an expressed sequence tag (EST) database, such as that available from GenBank. Searches for overlapping ESTs may generally be performed using well known programs (*e.g.*, NCBI BLAST searches), and such ESTs may be used to generate a contiguous full length sequence.

Certain nucleic acid sequences of cDNA molecules encoding at least a portion of a prostate tumor protein are provided in SEQ ID NOs:1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 or 384-472. Isolation of these polynucleotides is described below. Each of these prostate tumor proteins was overexpressed in prostate tumor tissue.

Polynucleotide variants may generally be prepared by any method known in the art, including chemical synthesis by, for example, solid phase phosphoramidite chemical synthesis. Modifications in a polynucleotide sequence may

also be introduced using standard mutagenesis techniques, such as oligonucleotide-directed site-specific mutagenesis (*see* Adelman et al., *DNA* 2:183, 1983). Alternatively, RNA molecules may be generated by *in vitro* or *in vivo* transcription of DNA sequences encoding a prostate tumor protein, or portion thereof, provided that the DNA is incorporated into a vector with a suitable RNA polymerase promoter (such as T7 or SP6). Certain portions may be used to prepare an encoded polypeptide, as described herein. In addition, or alternatively, a portion may be administered to a patient such that the encoded polypeptide is generated *in vivo* (*e.g.*, by transfecting antigen-presenting cells, such as dendritic cells, with a cDNA construct encoding a prostate tumor polypeptide, and administering the transfected cells to the patient).

A portion of a sequence complementary to a coding sequence (*i.e.*, an antisense polynucleotide) may also be used as a probe or to modulate gene expression. cDNA constructs that can be transcribed into antisense RNA may also be introduced into cells of tissues to facilitate the production of antisense RNA. An antisense polynucleotide may be used, as described herein, to inhibit expression of a tumor protein. Antisense technology can be used to control gene expression through triple-helix formation, which compromises the ability of the double helix to open sufficiently for the binding of polymerases, transcription factors or regulatory molecules (*see* Gee et al., *In Huber and Carr, Molecular and Immunologic Approaches*, Futura Publishing Co. (Mt. Kisco, NY; 1994)). Alternatively, an antisense molecule may be designed to hybridize with a control region of a gene (*e.g.*, promoter, enhancer or transcription initiation site), and block transcription of the gene; or to block translation by inhibiting binding of a transcript to ribosomes.

A portion of a coding sequence, or of a complementary sequence, may also be designed as a probe or primer to detect gene expression. Probes may be labeled with a variety of reporter groups, such as radionuclides and enzymes, and are preferably at least 10 nucleotides in length, more preferably at least 20 nucleotides in length and still more preferably at least 30 nucleotides in length. Primers, as noted above, are preferably 22-30 nucleotides in length.

Any polynucleotide may be further modified to increase stability *in vivo*. Possible modifications include, but are not limited to, the addition of flanking sequences at the 5' and/or 3' ends; the use of phosphorothioate or 2' O-methyl rather than phosphodiesterase linkages in the backbone; and/or the inclusion of nontraditional bases such as inosine, queosine and wybutosine, as well as acetyl-, methyl-, thio- and other modified forms of adenine, cytidine, guanine, thymine and uridine.

Nucleotide sequences as described herein may be joined to a variety of other nucleotide sequences using established recombinant DNA techniques. For example, a polynucleotide may be cloned into any of a variety of cloning vectors, including plasmids, phagemids, lambda phage derivatives and cosmids. Vectors of particular interest include expression vectors, replication vectors, probe generation vectors and sequencing vectors. In general, a vector will contain an origin of replication functional in at least one organism, convenient restriction endonuclease sites and one or more selectable markers. Other elements will depend upon the desired use, and will be apparent to those of ordinary skill in the art.

Within certain embodiments, polynucleotides may be formulated so as to permit entry into a cell of a mammal, and expression therein. Such formulations are particularly useful for therapeutic purposes, as described below. Those of ordinary skill in the art will appreciate that there are many ways to achieve expression of a polynucleotide in a target cell, and any suitable method may be employed. For example, a polynucleotide may be incorporated into a viral vector such as, but not limited to, adenovirus, adeno-associated virus, retrovirus, or vaccinia or other pox virus (*e.g.*, avian pox virus). Techniques for incorporating DNA into such vectors are well known to those of ordinary skill in the art. A retroviral vector may additionally transfer or incorporate a gene for a selectable marker (to aid in the identification or selection of transduced cells) and/or a targeting moiety, such as a gene that encodes a ligand for a receptor on a specific target cell, to render the vector target specific. Targeting may also be accomplished using an antibody, by methods known to those of ordinary skill in the art.

Other formulations for therapeutic purposes include colloidal dispersion systems, such as macromolecule complexes, nanocapsules, microspheres, beads, and lipid-based systems including oil-in-water emulsions, micelles, mixed micelles, and liposomes. A preferred colloidal system for use as a delivery vehicle *in vitro* and *in vivo* is a liposome (*i.e.*, an artificial membrane vesicle). The preparation and use of such systems is well known in the art.

#### PROSTATE TUMOR POLYPEPTIDES

Within the context of the present invention, polypeptides may comprise at least an immunogenic portion of a prostate tumor protein or a variant thereof, as described herein. As noted above, a "prostate tumor protein" is a protein that is expressed by prostate tumor cells. Proteins that are prostate tumor proteins also react detectably within an immunoassay (such as an ELISA) with antisera from a patient with prostate cancer. Polypeptides as described herein may be of any length. Additional sequences derived from the native protein and/or heterologous sequences may be present, and such sequences may (but need not) possess further immunogenic or antigenic properties.

An "immunogenic portion," as used herein is a portion of a protein that is recognized (*i.e.*, specifically bound) by a B-cell and/or T-cell surface antigen receptor. Such immunogenic portions generally comprise at least 5 amino acid residues, more preferably at least 10, and still more preferably at least 20 amino acid residues of a prostate tumor protein or a variant thereof. Certain preferred immunogenic portions include peptides in which an N-terminal leader sequence and/or transmembrane domain have been deleted. Other preferred immunogenic portions may contain a small N- and/or C-terminal deletion (*e.g.*, 1-30 amino acids, preferably 5-15 amino acids), relative to the mature protein.

Immunogenic portions may generally be identified using well known techniques, such as those summarized in Paul, *Fundamental Immunology*, 3rd ed., 243-247 (Raven Press, 1993) and references cited therein. Such techniques include screening polypeptides for the ability to react with antigen-specific antibodies, antisera

and/or T-cell lines or clones. As used herein, antisera and antibodies are "antigen-specific" if they specifically bind to an antigen (*i.e.*, they react with the protein in an ELISA or other immunoassay, and do not react detectably with unrelated proteins). Such antisera and antibodies may be prepared as described herein, and using well known techniques. An immunogenic portion of a native prostate tumor protein is a portion that reacts with such antisera and/or T-cells at a level that is not substantially less than the reactivity of the full length polypeptide (*e.g.*, in an ELISA and/or T-cell reactivity assay). Such immunogenic portions may react within such assays at a level that is similar to or greater than the reactivity of the full length polypeptide. Such screens may generally be performed using methods well known to those of ordinary skill in the art, such as those described in Harlow and Lane, *Antibodies: A Laboratory Manual*, Cold Spring Harbor Laboratory, 1988. For example, a polypeptide may be immobilized on a solid support and contacted with patient sera to allow binding of antibodies within the sera to the immobilized polypeptide. Unbound sera may then be removed and bound antibodies detected using, for example, <sup>125</sup>I-labeled Protein A.

As noted above, a composition may comprise a variant of a native prostate tumor protein. A polypeptide "variant," as used herein, is a polypeptide that differs from a native prostate tumor protein in one or more substitutions, deletions, additions and/or insertions, such that the immunogenicity of the polypeptide is not substantially diminished. In other words, the ability of a variant to react with antigen-specific antisera may be enhanced or unchanged, relative to the native protein, or may be diminished by less than 50%, and preferably less than 20%, relative to the native protein. Such variants may generally be identified by modifying one of the above polypeptide sequences and evaluating the reactivity of the modified polypeptide with antigen-specific antibodies or antisera as described herein. Preferred variants include those in which one or more portions, such as an N-terminal leader sequence or transmembrane domain, have been removed. Other preferred variants include variants in which a small portion (*e.g.*, 1-30 amino acids, preferably 5-15 amino acids) has been removed from the N- and/or C-terminal of the mature protein. Polypeptide variants preferably exhibit at least about 70%, more preferably at least about 90% and most

preferably at least about 95% identity (determined as described above) to the identified polypeptides.

Preferably, a variant contains conservative substitutions. A "conservative substitution" is one in which an amino acid is substituted for another amino acid that has similar properties, such that one skilled in the art of peptide chemistry would expect the secondary structure and hydropathic nature of the polypeptide to be substantially unchanged. Amino acid substitutions may generally be made on the basis of similarity in polarity, charge, solubility, hydrophobicity, hydrophilicity and/or the amphipathic nature of the residues. For example, negatively charged amino acids include aspartic acid and glutamic acid; positively charged amino acids include lysine and arginine; and amino acids with uncharged polar head groups having similar hydrophilicity values include leucine, isoleucine and valine; glycine and alanine; asparagine and glutamine; and serine, threonine, phenylalanine and tyrosine. Other groups of amino acids that may represent conservative changes include: (1) ala, pro, gly, glu, asp, gln, asn, ser, thr; (2) cys, ser, tyr, thr; (3) val, ile, leu, met, ala, phe; (4) lys, arg, his; and (5) phe, tyr, trp, his. A variant may also, or alternatively, contain nonconservative changes. In a preferred embodiment, variant polypeptides differ from a native sequence by substitution, deletion or addition of five amino acids or fewer. Variants may also (or alternatively) be modified by, for example, the deletion or addition of amino acids that have minimal influence on the immunogenicity, secondary structure and hydropathic nature of the polypeptide.

As noted above, polypeptides may comprise a signal (or leader) sequence at the N-terminal end of the protein which co-translationally or post-translationally directs transfer of the protein. The polypeptide may also be conjugated to a linker or other sequence for ease of synthesis, purification or identification of the polypeptide (*e.g.*, poly-His), or to enhance binding of the polypeptide to a solid support. For example, a polypeptide may be conjugated to an immunoglobulin Fc region.

Polypeptides may be prepared using any of a variety of well known techniques. Recombinant polypeptides encoded by DNA sequences as described above may be readily prepared from the DNA sequences using any of a variety of expression

vectors known to those of ordinary skill in the art. Expression may be achieved in any appropriate host cell that has been transformed or transfected with an expression vector containing a DNA molecule that encodes a recombinant polypeptide. Suitable host cells include prokaryotes, yeast and higher eukaryotic cells. Preferably, the host cells employed are *E. coli*, yeast or a mammalian cell line such as COS or CHO. Supernatants from suitable host/vector systems which secrete recombinant protein or polypeptide into culture media may be first concentrated using a commercially available filter. Following concentration, the concentrate may be applied to a suitable purification matrix such as an affinity matrix or an ion exchange resin. Finally, one or more reverse phase HPLC steps can be employed to further purify a recombinant polypeptide.

Portions and other variants having fewer than about 100 amino acids, and generally fewer than about 50 amino acids, may also be generated by synthetic means, using techniques well known to those of ordinary skill in the art. For example, such polypeptides may be synthesized using any of the commercially available solid-phase techniques, such as the Merrifield solid-phase synthesis method, where amino acids are sequentially added to a growing amino acid chain. *See Merrifield, J. Am. Chem. Soc.* 85:2149-2146, 1963. Equipment for automated synthesis of polypeptides is commercially available from suppliers such as Perkin Elmer/Applied BioSystems Division (Foster City, CA), and may be operated according to the manufacturer's instructions.

Within certain specific embodiments, a polypeptide may be a fusion protein that comprises multiple polypeptides as described herein, or that comprises at least one polypeptide as described herein and an unrelated sequence, such as a known tumor protein. A fusion partner may, for example, assist in providing T helper epitopes (an immunological fusion partner), preferably T helper epitopes recognized by humans, or may assist in expressing the protein (an expression enhancer) at higher yields than the native recombinant protein. Certain preferred fusion partners are both immunological and expression enhancing fusion partners. Other fusion partners may be selected so as to increase the solubility of the protein or to enable the protein to be

targeted to desired intracellular compartments. Still further fusion partners include affinity tags, which facilitate purification of the protein.

In certain embodiments, the present invention provides fusion proteins comprising a polypeptide disclosed herein together with at least one of the following known prostate antigens: prostate specific antigen (PSA); prostatic acid phosphatase (PAP); and prostate specific membrane antigen (PSMA). The protein sequences for PSMA, PAP and PSA are provided in SEQ ID NO: 473-475, respectively. In certain embodiments, the fusion proteins of the present invention comprise PSA, PAP and/or PSMA in combination with one or more of the following the inventive antigens: P501S (amino acid sequence provided in SEQ ID NO: 113); P703P (amino acid sequences provided in SEQ ID NO: 327, 329, 331); P704P (cDNA sequence provided in SEQ ID NO: 67); P712P (cDNA sequence provided in SEQ ID NO: 308); P775P (cDNA sequence provided in SEQ ID NO: 311); P776P (cDNA sequence provided in SEQ ID NO: 354); P790P (cDNA sequence provided in SEQ ID NO: 352). The amino acid sequence of a fusion protein of PSA, P703P and P501S is provided in SEQ ID NO: 476. In preferred embodiments, the inventive fusion proteins comprise one of the following combinations of antigens: PSA and P703P; PSA and P501S; PAP and P703P; PAP and P501S; PSMA and P703P; PSMA and P501S; PSA, PAP and P703P; PSA, PAP and P501S; PSA, PAP, PSMA and P703P, PSA, PAP, PSMA and P501S. One of skill in the art will appreciate that the order of polypeptides within a fusion protein can be altered without substantially changing the therapeutic, prophylactic or diagnostic properties of the fusion protein.

The fusion proteins described above are more immunogenic and will be effective in a greater number of prostate cancer patients than any of the individual components alone. The use of multiple antigens in the form of a fusion protein also lessens the likelihood of immunologic escape.

Fusion proteins may generally be prepared using standard techniques, including chemical conjugation. Preferably, a fusion protein is expressed as a recombinant protein, allowing the production of increased levels, relative to a non-fused protein, in an expression system. Briefly, DNA sequences encoding the polypeptide



components may be assembled separately, and ligated into an appropriate expression vector. The 3' end of the DNA sequence encoding one polypeptide component is ligated, with or without a peptide linker, to the 5' end of a DNA sequence encoding the second polypeptide component so that the reading frames of the sequences are in phase. This permits translation into a single fusion protein that retains the biological activity of both component polypeptides.

A peptide linker sequence may be employed to separate the first and the second polypeptide components by a distance sufficient to ensure that each polypeptide folds into its secondary and tertiary structures. Such a peptide linker sequence is incorporated into the fusion protein using standard techniques well known in the art. Suitable peptide linker sequences may be chosen based on the following factors: (1) their ability to adopt a flexible extended conformation; (2) their inability to adopt a secondary structure that could interact with functional epitopes on the first and second polypeptides; and (3) the lack of hydrophobic or charged residues that might react with the polypeptide functional epitopes. Preferred peptide linker sequences contain Gly, Asn and Ser residues. Other near neutral amino acids, such as Thr and Ala may also be used in the linker sequence. Amino acid sequences which may be usefully employed as linkers include those disclosed in Maratea et al., *Gene* 40:39-46, 1985; Murphy et al., *Proc. Natl. Acad. Sci. USA* 83:8258-8262, 1986; U.S. Patent No. 4,935,233 and U.S. Patent No. 4,751,180. The linker sequence may generally be from 1 to about 50 amino acids in length. Linker sequences are not required when the first and second polypeptides have non-essential N-terminal amino acid regions that can be used to separate the functional domains and prevent steric interference.

The ligated DNA sequences are operably linked to suitable transcriptional or translational regulatory elements. The regulatory elements responsible for expression of DNA are located only 5' to the DNA sequence encoding the first polypeptides. Similarly, stop codons required to end translation and transcription termination signals are only present 3' to the DNA sequence encoding the second polypeptide.

Fusion proteins are also provided that comprise a polypeptide of the present invention together with an unrelated immunogenic protein. Preferably the immunogenic protein is capable of eliciting a recall response. Examples of such proteins include tetanus, tuberculosis and hepatitis proteins (*see*, for example, Stoute et al. *New Engl. J. Med.*, 336:86-91, 1997).

Within preferred embodiments, an immunological fusion partner is derived from protein D, a surface protein of the gram-negative bacterium *Haemophilus influenza B* (WO 91/18926). Preferably, a protein D derivative comprises approximately the first third of the protein (*e.g.*, the first N-terminal 100-110 amino acids), and a protein D derivative may be lipidated. Within certain preferred embodiments, the first 109 residues of a Lipoprotein D fusion partner is included on the N-terminus to provide the polypeptide with additional exogenous T-cell epitopes and to increase the expression level in *E. coli* (thus functioning as an expression enhancer). The lipid tail ensures optimal presentation of the antigen to antigen presenting cells. Other fusion partners include the non-structural protein from influenzae virus, NS1 (hemagglutinin). Typically, the N-terminal 81 amino acids are used, although different fragments that include T-helper epitopes may be used.

In another embodiment, the immunological fusion partner is the protein known as LYTA, or a portion thereof (preferably a C-terminal portion). LYTA is derived from *Streptococcus pneumoniae*, which synthesizes an N-acetyl-L-alanine amidase known as amidase LYTA (encoded by the *LytA* gene; *Gene* 43:265-292, 1986). LYTA is an autolysin that specifically degrades certain bonds in the peptidoglycan backbone. The C-terminal domain of the LYTA protein is responsible for the affinity to the choline or to some choline analogues such as DEAE. This property has been exploited for the development of *E. coli* C-LYTA expressing plasmids useful for expression of fusion proteins. Purification of hybrid proteins containing the C-LYTA fragment at the amino terminus has been described (*see Biotechnology* 10:795-798, 1992). Within a preferred embodiment, a repeat portion of LYTA may be incorporated into a fusion protein. A repeat portion is found in the C-

terminal region starting at residue 178. A particularly preferred repeat portion incorporates residues 188-305.

In general, polypeptides (including fusion proteins) and polynucleotides as described herein are isolated. An "isolated" polypeptide or polynucleotide is one that is removed from its original environment. For example, a naturally-occurring protein is isolated if it is separated from some or all of the coexisting materials in the natural system. Preferably, such polypeptides are at least about 90% pure, more preferably at least about 95% pure and most preferably at least about 99% pure. A polynucleotide is considered to be isolated if, for example, it is cloned into a vector that is not a part of the natural environment.

#### BINDING AGENTS

The present invention further provides agents, such as antibodies and antigen-binding fragments thereof, that specifically bind to a prostate tumor protein. As used herein, an antibody, or antigen-binding fragment thereof, is said to "specifically bind" to a prostate tumor protein if it reacts at a detectable level (within, for example, an ELISA) with a prostate tumor protein, and does not react detectably with unrelated proteins under similar conditions. As used herein, "binding" refers to a noncovalent association between two separate molecules such that a complex is formed. The ability to bind may be evaluated by, for example, determining a binding constant for the formation of the complex. The binding constant is the value obtained when the concentration of the complex is divided by the product of the component concentrations. In general, two compounds are said to "bind," in the context of the present invention, when the binding constant for complex formation exceeds about  $10^3$  L/mol. The binding constant may be determined using methods well known in the art.

Binding agents may be further capable of differentiating between patients with and without a cancer, such as prostate cancer, using the representative assays provided herein. In other words, antibodies or other binding agents that bind to a prostate tumor protein will generate a signal indicating the presence of a cancer in at least about 20% of patients with the disease, and will generate a negative signal

indicating the absence of the disease in at least about 90% of individuals without the cancer. To determine whether a binding agent satisfies this requirement, biological samples (*e.g.*, blood, sera, urine and/or tumor biopsies) from patients with and without a cancer (as determined using standard clinical tests) may be assayed as described herein for the presence of polypeptides that bind to the binding agent. It will be apparent that a statistically significant number of samples with and without the disease should be assayed. Each binding agent should satisfy the above criteria; however, those of ordinary skill in the art will recognize that binding agents may be used in combination to improve sensitivity.

Any agent that satisfies the above requirements may be a binding agent. For example, a binding agent may be a ribosome, with or without a peptide component, an RNA molecule or a polypeptide. In a preferred embodiment, a binding agent is an antibody or an antigen-binding fragment thereof. Antibodies may be prepared by any of a variety of techniques known to those of ordinary skill in the art. *See, e.g.*, Harlow and Lane, *Antibodies: A Laboratory Manual*, Cold Spring Harbor Laboratory, 1988. In general, antibodies can be produced by cell culture techniques, including the generation of monoclonal antibodies as described herein, or via transfection of antibody genes into suitable bacterial or mammalian cell hosts, in order to allow for the production of recombinant antibodies. In one technique, an immunogen comprising the polypeptide is initially injected into any of a wide variety of mammals (*e.g.*, mice, rats, rabbits, sheep or goats). In this step, the polypeptides of this invention may serve as the immunogen without modification. Alternatively, particularly for relatively short polypeptides, a superior immune response may be elicited if the polypeptide is joined to a carrier protein, such as bovine serum albumin or keyhole limpet hemocyanin. The immunogen is injected into the animal host, preferably according to a predetermined schedule incorporating one or more booster immunizations, and the animals are bled periodically. Polyclonal antibodies specific for the polypeptide may then be purified from such antisera by, for example, affinity chromatography using the polypeptide coupled to a suitable solid support.

Monoclonal antibodies specific for an antigenic polypeptide of interest may be prepared, for example, using the technique of Kohler and Milstein, *Eur. J. Immunol.* 6:511-519, 1976, and improvements thereto. Briefly, these methods involve the preparation of immortal cell lines capable of producing antibodies having the desired specificity (*i.e.*, reactivity with the polypeptide of interest). Such cell lines may be produced, for example, from spleen cells obtained from an animal immunized as described above. The spleen cells are then immortalized by, for example, fusion with a myeloma cell fusion partner, preferably one that is syngeneic with the immunized animal. A variety of fusion techniques may be employed. For example, the spleen cells and myeloma cells may be combined with a nonionic detergent for a few minutes and then plated at low density on a selective medium that supports the growth of hybrid cells, but not myeloma cells. A preferred selection technique uses HAT (hypoxanthine, aminopterin, thymidine) selection. After a sufficient time, usually about 1 to 2 weeks, colonies of hybrids are observed. Single colonies are selected and their culture supernatants tested for binding activity against the polypeptide. Hybridomas having high reactivity and specificity are preferred.

Monoclonal antibodies may be isolated from the supernatants of growing hybridoma colonies. In addition, various techniques may be employed to enhance the yield, such as injection of the hybridoma cell line into the peritoneal cavity of a suitable vertebrate host, such as a mouse. Monoclonal antibodies may then be harvested from the ascites fluid or the blood. Contaminants may be removed from the antibodies by conventional techniques, such as chromatography, gel filtration, precipitation, and extraction. The polypeptides of this invention may be used in the purification process in, for example, an affinity chromatography step.

Within certain embodiments, the use of antigen-binding fragments of antibodies may be preferred. Such fragments include Fab fragments, which may be prepared using standard techniques. Briefly, immunoglobulins may be purified from rabbit serum by affinity chromatography on Protein A bead columns (Harlow and Lane, *Antibodies: A Laboratory Manual*, Cold Spring Harbor Laboratory, 1988) and digested

by papain to yield Fab and Fc fragments. The Fab and Fc fragments may be separated by affinity chromatography on protein A bead columns.

Monoclonal antibodies of the present invention may be coupled to one or more therapeutic agents. Suitable agents in this regard include radionuclides, differentiation inducers, drugs, toxins, and derivatives thereof. Preferred radionuclides include  $^{90}\text{Y}$ ,  $^{123}\text{I}$ ,  $^{125}\text{I}$ ,  $^{131}\text{I}$ ,  $^{186}\text{Re}$ ,  $^{188}\text{Re}$ ,  $^{211}\text{At}$ , and  $^{212}\text{Bi}$ . Preferred drugs include methotrexate, and pyrimidine and purine analogs. Preferred differentiation inducers include phorbol esters and butyric acid. Preferred toxins include ricin, abrin, diphtheria toxin, cholera toxin, gelonin, *Pseudomonas* exotoxin, *Shigella* toxin, and pokeweed antiviral protein.

A therapeutic agent may be coupled (*e.g.*, covalently bonded) to a suitable monoclonal antibody either directly or indirectly (*e.g.*, via a linker group). A direct reaction between an agent and an antibody is possible when each possesses a substituent capable of reacting with the other. For example, a nucleophilic group, such as an amino or sulfhydryl group, on one may be capable of reacting with a carbonyl-containing group, such as an anhydride or an acid halide, or with an alkyl group containing a good leaving group (*e.g.*, a halide) on the other.

Alternatively, it may be desirable to couple a therapeutic agent and an antibody via a linker group. A linker group can function as a spacer to distance an antibody from an agent in order to avoid interference with binding capabilities. A linker group can also serve to increase the chemical reactivity of a substituent on an agent or an antibody, and thus increase the coupling efficiency. An increase in chemical reactivity may also facilitate the use of agents, or functional groups on agents, which otherwise would not be possible.

It will be evident to those skilled in the art that a variety of bifunctional or polyfunctional reagents, both homo- and hetero-functional (such as those described in the catalog of the Pierce Chemical Co., Rockford, IL), may be employed as the linker group. Coupling may be effected, for example, through amino groups, carboxyl groups, sulfhydryl groups or oxidized carbohydrate residues. There are numerous references describing such methodology, *e.g.*, U.S. Patent No. 4,671,958, to Rodwell et al.

Where a therapeutic agent is more potent when free from the antibody portion of the immunoconjugates of the present invention, it may be desirable to use a linker group which is cleavable during or upon internalization into a cell. A number of different cleavable linker groups have been described. The mechanisms for the intracellular release of an agent from these linker groups include cleavage by reduction of a disulfide bond (*e.g.*, U.S. Patent No. 4,489,710, to Spitler), by irradiation of a photolabile bond (*e.g.*, U.S. Patent No. 4,625,014, to Senter et al.), by hydrolysis of derivatized amino acid side chains (*e.g.*, U.S. Patent No. 4,638,045, to Kohn et al.), by serum complement-mediated hydrolysis (*e.g.*, U.S. Patent No. 4,671,958, to Rodwell et al.), and acid-catalyzed hydrolysis (*e.g.*, U.S. Patent No. 4,569,789, to Blattler et al.).

It may be desirable to couple more than one agent to an antibody. In one embodiment, multiple molecules of an agent are coupled to one antibody molecule. In another embodiment, more than one type of agent may be coupled to one antibody. Regardless of the particular embodiment, immunoconjugates with more than one agent may be prepared in a variety of ways. For example, more than one agent may be coupled directly to an antibody molecule, or linkers which provide multiple sites for attachment can be used. Alternatively, a carrier can be used.

A carrier may bear the agents in a variety of ways, including covalent bonding either directly or via a linker group. Suitable carriers include proteins such as albumins (*e.g.*, U.S. Patent No. 4,507,234, to Kato et al.), peptides and polysaccharides such as aminodextran (*e.g.*, U.S. Patent No. 4,699,784, to Shih et al.). A carrier may also bear an agent by noncovalent bonding or by encapsulation, such as within a liposome vesicle (*e.g.*, U.S. Patent Nos. 4,429,008 and 4,873,088). Carriers specific for radionuclide agents include radiohalogenated small molecules and chelating compounds. For example, U.S. Patent No. 4,735,792 discloses representative radiohalogenated small molecules and their synthesis. A radionuclide chelate may be formed from chelating compounds that include those containing nitrogen and sulfur atoms as the donor atoms for binding the metal, or metal oxide, radionuclide. For example, U.S. Patent No. 4,673,562, to Davison et al. discloses representative chelating compounds and their synthesis.

A variety of routes of administration for the antibodies and immunoconjugates may be used. Typically, administration will be intravenous, intramuscular, subcutaneous or in the bed of a resected tumor. It will be evident that the precise dose of the antibody/immunoconjugate will vary depending upon the antibody used, the antigen density on the tumor, and the rate of clearance of the antibody.

#### T CELLS

Immunotherapeutic compositions may also, or alternatively, comprise T cells specific for a prostate tumor protein. Such cells may generally be prepared *in vitro* or *ex vivo*, using standard procedures. For example, T cells may be isolated from bone marrow, peripheral blood, or a fraction of bone marrow or peripheral blood of a patient, using a commercially available cell separation system, such as the CEPRATE™ system, available from CellPro Inc., Bothell WA (*see also* U.S. Patent No. 5,240,856; U.S. Patent No. 5,215,926; WO 89/06280; WO 91/16116 and WO 92/07243). Alternatively, T cells may be derived from related or unrelated humans, non-human mammals, cell lines or cultures.

T cells may be stimulated with a prostate tumor polypeptide, polynucleotide encoding a prostate tumor polypeptide and/or an antigen presenting cell (APC) that expresses such a polypeptide. Such stimulation is performed under conditions and for a time sufficient to permit the generation of T cells that are specific for the polypeptide. Preferably, a prostate tumor polypeptide or polynucleotide is present within a delivery vehicle, such as a microsphere, to facilitate the generation of specific T cells.

T cells are considered to be specific for a prostate tumor polypeptide if the T cells kill target cells coated with the polypeptide or expressing a gene encoding the polypeptide. T cell specificity may be evaluated using any of a variety of standard techniques. For example, within a chromium release assay or proliferation assay, a stimulation index of more than two fold increase in lysis and/or proliferation, compared to negative controls, indicates T cell specificity. Such assays may be performed, for example, as described in Chen et al., *Cancer Res.* 54:1065-1070, 1994. Alternatively,



detection of the proliferation of T cells may be accomplished by a variety of known techniques. For example, T cell proliferation can be detected by measuring an increased rate of DNA synthesis (*e.g.*, by pulse-labeling cultures of T cells with tritiated thymidine and measuring the amount of tritiated thymidine incorporated into DNA). Contact with a prostate tumor polypeptide (100 ng/ml - 100 µg/ml, preferably 200 ng/ml - 25 µg/ml) for 3 - 7 days should result in at least a two fold increase in proliferation of the T cells. Contact as described above for 2-3 hours should result in activation of the T cells, as measured using standard cytokine assays in which a two fold increase in the level of cytokine release (*e.g.*, TNF or IFN-γ) is indicative of T cell activation (*see* Coligan et al., Current Protocols in Immunology, vol. 1, Wiley Interscience (Greene 1998)). T cells that have been activated in response to a prostate tumor polypeptide, polynucleotide or polypeptide-expressing APC may be CD4<sup>+</sup> and/or CD8<sup>+</sup>. Prostate tumor protein-specific T cells may be expanded using standard techniques. Within preferred embodiments, the T cells are derived from either a patient or a related, or unrelated, donor and are administered to the patient following stimulation and expansion.

For therapeutic purposes, CD4<sup>+</sup> or CD8<sup>+</sup> T cells that proliferate in response to a prostate tumor polypeptide, polynucleotide or APC can be expanded in number either *in vitro* or *in vivo*. Proliferation of such T cells *in vitro* may be accomplished in a variety of ways. For example, the T cells can be re-exposed to a prostate tumor polypeptide, or a short peptide corresponding to an immunogenic portion of such a polypeptide, with or without the addition of T cell growth factors, such as interleukin-2, and/or stimulator cells that synthesize a prostate tumor polypeptide. Alternatively, one or more T cells that proliferate in the presence of a prostate tumor protein can be expanded in number by cloning. Methods for cloning cells are well known in the art, and include limiting dilution.

#### PHARMACEUTICAL COMPOSITIONS AND VACCINES

Within certain aspects, polypeptides, polynucleotides, T cells and/or binding agents disclosed herein may be incorporated into pharmaceutical compositions

or immunogenic compositions (*i.e.*, vaccines). Pharmaceutical compositions comprise one or more such compounds and a physiologically acceptable carrier. Vaccines may comprise one or more such compounds and a non-specific immune response enhancer. A non-specific immune response enhancer may be any substance that enhances an immune response to an exogenous antigen. Examples of non-specific immune response enhancers include adjuvants, biodegradable microspheres (*e.g.*, polylactic galactide) and liposomes (into which the compound is incorporated; *see e.g.*, Fullerton, U.S. Patent No. 4,235,877). Vaccine preparation is generally described in, for example, M.F. Powell and M.J. Newman, eds., "Vaccine Design (the subunit and adjuvant approach)," Plenum Press (NY, 1995). Pharmaceutical compositions and vaccines within the scope of the present invention may also contain other compounds, which may be biologically active or inactive. For example, one or more immunogenic portions of other tumor antigens may be present, either incorporated into a fusion polypeptide or as a separate compound, within the composition or vaccine.

A pharmaceutical composition or vaccine may contain DNA encoding one or more of the polypeptides as described above, such that the polypeptide is generated *in situ*. As noted above, the DNA may be present within any of a variety of delivery systems known to those of ordinary skill in the art, including nucleic acid expression systems, bacteria and viral expression systems. Numerous gene delivery techniques are well known in the art, such as those described by Rolland, *Crit. Rev. Therap. Drug Carrier Systems* 15:143-198, 1998, and references cited therein. Appropriate nucleic acid expression systems contain the necessary DNA sequences for expression in the patient (such as a suitable promoter and terminating signal). Bacterial delivery systems involve the administration of a bacterium (such as *Bacillus-Calmette-Guerrin*) that expresses an immunogenic portion of the polypeptide on its cell surface or secretes such an epitope. In a preferred embodiment, the DNA may be introduced using a viral expression system (*e.g.*, vaccinia or other pox virus, retrovirus, or adenovirus), which may involve the use of a non-pathogenic (defective), replication competent virus. Suitable systems are disclosed, for example, in Fisher-Hoch et al., *Proc. Natl. Acad. Sci. USA* 86:317-321, 1989; Flexner et al., *Ann. N.Y. Acad. Sci.* 569:86-103, 1989; Flexner

et al., *Vaccine* 8:17-21, 1990; U.S. Patent Nos. 4,603,112, 4,769,330, and 5,017,487; WO 89/01973; U.S. Patent No. 4,777,127; GB 2,200,651; EP 0,345,242; WO 91/02805; Berkner, *Biotechniques* 6:616-627, 1988; Rosenfeld et al., *Science* 252:431-434, 1991; Kolls et al., *Proc. Natl. Acad. Sci. USA* 91:215-219, 1994; Kass-Eisler et al., *Proc. Natl. Acad. Sci. USA* 90:11498-11502, 1993; Guzman et al., *Circulation* 88:2838-2848, 1993; and Guzman et al., *Cir. Res.* 73:1202-1207, 1993. Techniques for incorporating DNA into such expression systems are well known to those of ordinary skill in the art. The DNA may also be "naked," as described, for example, in Ulmer et al., *Science* 259:1745-1749, 1993 and reviewed by Cohen, *Science* 259:1691-1692, 1993. The uptake of naked DNA may be increased by coating the DNA onto biodegradable beads, which are efficiently transported into the cells.

While any suitable carrier known to those of ordinary skill in the art may be employed in the pharmaceutical compositions of this invention, the type of carrier will vary depending on the mode of administration. Compositions of the present invention may be formulated for any appropriate manner of administration, including for example, topical, oral, nasal, intravenous, intracranial, intraperitoneal, subcutaneous or intramuscular administration. For parenteral administration, such as subcutaneous injection, the carrier preferably comprises water, saline, alcohol, a fat, a wax or a buffer. For oral administration, any of the above carriers or a solid carrier, such as mannitol, lactose, starch, magnesium stearate, sodium saccharine, talcum, cellulose, glucose, sucrose, and magnesium carbonate, may be employed. Biodegradable microspheres (e.g., polylactate polyglycolate) may also be employed as carriers for the pharmaceutical compositions of this invention. Suitable biodegradable microspheres are disclosed, for example, in U.S. Patent Nos. 4,897,268 and 5,075,109.

Such compositions may also comprise buffers (e.g., neutral buffered saline or phosphate buffered saline), carbohydrates (e.g., glucose, mannose, sucrose or dextrans), mannitol, proteins, polypeptides or amino acids such as glycine, antioxidants, chelating agents such as EDTA or glutathione, adjuvants (e.g., aluminum hydroxide) and/or preservatives. Alternatively, compositions of the present invention may be

formulated as a lyophilizate. Compounds may also be encapsulated within liposomes using well known technology.

Any of a variety of non-specific immune response enhancers may be employed in the vaccines of this invention. For example, an adjuvant may be included. Most adjuvants contain a substance designed to protect the antigen from rapid catabolism, such as aluminum hydroxide or mineral oil, and a stimulator of immune responses, such as lipid A, *Bordetella pertussis* or *Mycobacterium tuberculosis* derived proteins. Suitable adjuvants are commercially available as, for example, Freund's Incomplete Adjuvant and Complete Adjuvant (Difco Laboratories, Detroit, MI); Merck Adjuvant 65 (Merck and Company, Inc., Rahway, NJ); aluminum salts such as aluminum hydroxide gel (alum) or aluminum phosphate; salts of calcium, iron or zinc; an insoluble suspension of acylated tyrosine; acylated sugars; cationically or anionically derivatized polysaccharides; polyphosphazenes; biodegradable microspheres; monophosphoryl lipid A and quil A. Cytokines, such as GM-CSF or interleukin-2, -7, or -12, may also be used as adjuvants.

Within the vaccines provided herein, the adjuvant composition is preferably designed to induce an immune response predominantly of the Th1 type. High levels of Th1-type cytokines (e.g., IFN- $\gamma$ , IL-2 and IL-12) tend to favor the induction of cell mediated immune responses to an administered antigen. In contrast, high levels of Th2-type cytokines (e.g., IL-4, IL-5, IL-6, IL-10 and TNF- $\beta$ ) tend to favor the induction of humoral immune responses. Following application of a vaccine as provided herein, a patient will support an immune response that includes Th1- and Th2-type responses. Within a preferred embodiment, in which a response is predominantly Th1-type, the level of Th1-type cytokines will increase to a greater extent than the level of Th2-type cytokines. The levels of these cytokines may be readily assessed using standard assays. For a review of the families of cytokines, see Mosmann and Coffman, *Ann. Rev. Immunol.* 7:145-173, 1989.

Preferred adjuvants for use in eliciting a predominantly Th1-type response include, for example, a combination of monophosphoryl lipid A, preferably 3-de-O-acylated monophosphoryl lipid A (3D-MPL), together with an aluminum salt.

MPL adjuvants are available from Ribi ImmunoChem Research Inc. (Hamilton, MT; *see* US Patent Nos. 4,436,727; 4,877,611; 4,866,034 and 4,912,094). CpG-containing oligonucleotides (in which the CpG dinucleotide is unmethylated) also induce a predominantly Th1 response. Such oligonucleotides are well known and are described, for example, in WO 96/02555. Another preferred adjuvant is a saponin, preferably QS21, which may be used alone or in combination with other adjuvants. For example, an enhanced system involves the combination of a monophosphoryl lipid A and saponin derivative, such as the combination of QS21 and 3D-MPL as described in WO 94/00153, or a less reactogenic composition where the QS21 is quenched with cholesterol, as described in WO 96/33739. Other preferred formulations comprises an oil-in-water emulsion and tocopherol. A particularly potent adjuvant formulation involving QS21, 3D-MPL and tocopherol in an oil-in-water emulsion is described in WO 95/17210. Any vaccine provided herein may be prepared using well known methods that result in a combination of antigen, immune response enhancer and a suitable carrier or excipient.

The compositions described herein may be administered as part of a sustained release formulation (*i.e.*, a formulation such as a capsule or sponge that effects a slow release of compound following administration). Such formulations may generally be prepared using well known technology and administered by, for example, oral, rectal or subcutaneous implantation, or by implantation at the desired target site. Sustained-release formulations may contain a polypeptide, polynucleotide or antibody dispersed in a carrier matrix and/or contained within a reservoir surrounded by a rate controlling membrane. Carriers for use within such formulations are biocompatible, and may also be biodegradable; preferably the formulation provides a relatively constant level of active component release. The amount of active compound contained within a sustained release formulation depends upon the site of implantation, the rate and expected duration of release and the nature of the condition to be treated or prevented.

Any of a variety of delivery vehicles may be employed within pharmaceutical compositions and vaccines to facilitate production of an antigen-specific

immune response that targets tumor cells. Delivery vehicles include antigen presenting cells (APCs), such as dendritic cells, macrophages, B cells, monocytes and other cells that may be engineered to be efficient APCs. Such cells may, but need not, be genetically modified to increase the capacity for presenting the antigen, to improve activation and/or maintenance of the T cell response, to have anti-tumor effects *per se* and/or to be immunologically compatible with the receiver (*i.e.*, matched HLA haplotype). APCs may generally be isolated from any of a variety of biological fluids and organs, including tumor and peritumoral tissues, and may be autologous, allogeneic, syngeneic or xenogeneic cells.

Certain preferred embodiments of the present invention use dendritic cells or progenitors thereof as antigen-presenting cells. Dendritic cells are highly potent APCs (Banchereau and Steinman, *Nature* 392:245-251, 1998) and have been shown to be effective as a physiological adjuvant for eliciting prophylactic or therapeutic antitumor immunity (*see* Timmerman and Levy, *Ann. Rev. Med.* 50:507-529, 1999). In general, dendritic cells may be identified based on their typical shape (stellate *in situ*, with marked cytoplasmic processes (dendrites) visible *in vitro*) and based on the lack of differentiation markers of B cells (CD19 and CD20), T cells (CD3), monocytes (CD14) and natural killer cells (CD56), as determined using standard assays. Dendritic cells may, of course, be engineered to express specific cell-surface receptors or ligands that are not commonly found on dendritic cells *in vivo* or *ex vivo*, and such modified dendritic cells are contemplated by the present invention. As an alternative to dendritic cells, secreted vesicles antigen-loaded dendritic cells (called exosomes) may be used within a vaccine (*see* Zitvogel et al., *Nature Med.* 4:594-600, 1998).

Dendritic cells and progenitors may be obtained from peripheral blood, bone marrow, tumor-infiltrating cells, peritumoral tissues-infiltrating cells, lymph nodes, spleen, skin, umbilical cord blood or any other suitable tissue or fluid. For example, dendritic cells may be differentiated *ex vivo* by adding a combination of cytokines such as GM-CSF, IL-4, IL-13 and/or TNF $\alpha$  to cultures of monocytes harvested from peripheral blood. Alternatively, CD34 positive cells harvested from peripheral blood, umbilical cord blood or bone marrow may be differentiated into

dendritic cells by adding to the culture medium combinations of GM-CSF, IL-3, TNF $\alpha$ , CD40 ligand, LPS, flt3 ligand and/or other compound(s) that induce maturation and proliferation of dendritic cells.

Dendritic cells are conveniently categorized as "immature" and "mature" cells, which allows a simple way to discriminate between two well characterized phenotypes. However, this nomenclature should not be construed to exclude all possible intermediate stages of differentiation. Immature dendritic cells are characterized as APC with a high capacity for antigen uptake and processing, which correlates with the high expression of Fc $\gamma$  receptor, mannose receptor and DEC-205 marker. The mature phenotype is typically characterized by a lower expression of these markers, but a high expression of cell surface molecules responsible for T cell activation such as class I and class II MHC, adhesion molecules (*e.g.*, CD54 and CD11) and costimulatory molecules (*e.g.*, CD40, CD80 and CD86).

APCs may generally be transfected with a polynucleotide encoding a prostate tumor protein (or portion or other variant thereof) such that the prostate tumor polypeptide, or an immunogenic portion thereof, is expressed on the cell surface. Such transfection may take place *ex vivo*, and a composition or vaccine comprising such transfected cells may then be used for therapeutic purposes, as described herein. Alternatively, a gene delivery vehicle that targets a dendritic or other antigen presenting cell may be administered to a patient, resulting in transfection that occurs *in vivo*. *In vivo* and *ex vivo* transfection of dendritic cells, for example, may generally be performed using any methods known in the art, such as those described in WO 97/24447, or the gene gun approach described by Mahvi et al., *Immunology and cell Biology* 75:456-460, 1997. Antigen loading of dendritic cells may be achieved by incubating dendritic cells or progenitor cells with the prostate tumor polypeptide, DNA (naked or within a plasmid vector) or RNA; or with antigen-expressing recombinant bacterium or viruses (*e.g.*, vaccinia, fowlpox, adenovirus or lentivirus vectors). Prior to loading, the polypeptide may be covalently conjugated to an immunological partner that provides T cell help (*e.g.*, a carrier molecule). Alternatively, a dendritic cell may be

pulsed with a non-conjugated immunological partner, separately or in the presence of the polypeptide.

#### CANCER THERAPY

In further aspects of the present invention, the compositions described herein may be used for immunotherapy of cancer, such as prostate cancer. Within such methods, pharmaceutical compositions and vaccines are typically administered to a patient. As used herein, a "patient" refers to any warm-blooded animal, preferably a human. A patient may or may not be afflicted with cancer. Accordingly, the above pharmaceutical compositions and vaccines may be used to prevent the development of a cancer or to treat a patient afflicted with a cancer. A cancer may be diagnosed using criteria generally accepted in the art, including the presence of a malignant tumor. Pharmaceutical compositions and vaccines may be administered either prior to or following surgical removal of primary tumors and/or treatment such as administration of radiotherapy or conventional chemotherapeutic drugs.

Within certain embodiments, immunotherapy may be active immunotherapy, in which treatment relies on the *in vivo* stimulation of the endogenous host immune system to react against tumors with the administration of immune response-modifying agents (such as polypeptides and polynucleotides disclosed herein).

Within other embodiments, immunotherapy may be passive immunotherapy, in which treatment involves the delivery of agents with established tumor-immune reactivity (such as effector cells or antibodies) that can directly or indirectly mediate antitumor effects and does not necessarily depend on an intact host immune system. Examples of effector cells include T cells as discussed above, T lymphocytes (such as CD8<sup>+</sup> cytotoxic T lymphocytes and CD4<sup>+</sup> T-helper tumor-infiltrating lymphocytes), killer cells (such as Natural Killer cells and lymphokine-activated killer cells), B cells and antigen-presenting cells (such as dendritic cells and macrophages) expressing a polypeptide provided herein. T cell receptors and antibody receptors specific for the polypeptides recited herein may be cloned, expressed and transferred into other vectors or effector cells for adoptive immunotherapy. The



polypeptides provided herein may also be used to generate antibodies or anti-idiotypic antibodies (as described above and in U.S. Patent No. 4,918,164) for passive immunotherapy.

Effector cells may generally be obtained in sufficient quantities for adoptive immunotherapy by growth *in vitro*, as described herein. Culture conditions for expanding single antigen-specific effector cells to several billion in number with retention of antigen recognition *in vivo* are well known in the art. Such *in vitro* culture conditions typically use intermittent stimulation with antigen, often in the presence of cytokines (such as IL-2) and non-dividing feeder cells. As noted above, immunoreactive polypeptides as provided herein may be used to rapidly expand antigen-specific T cell cultures in order to generate a sufficient number of cells for immunotherapy. In particular, antigen-presenting cells, such as dendritic, macrophage, monocyte, fibroblast or B cells, may be pulsed with immunoreactive polypeptides or transfected with one or more polynucleotides using standard techniques well known in the art. For example, antigen-presenting cells can be transfected with a polynucleotide having a promoter appropriate for increasing expression in a recombinant virus or other expression system. Cultured effector cells for use in therapy must be able to grow and distribute widely, and to survive long term *in vivo*. Studies have shown that cultured effector cells can be induced to grow *in vivo* and to survive long term in substantial numbers by repeated stimulation with antigen supplemented with IL-2 (*see*, for example, Cheever et al., *Immunological Reviews* 157:177, 1997).

Alternatively, a vector expressing a polypeptide recited herein may be introduced into antigen presenting cells taken from a patient and clonally propagated *ex vivo* for transplant back into the same patient. Transfected cells may be reintroduced into the patient using any means known in the art, preferably in sterile form by intravenous, intracavitary, intraperitoneal or intratumor administration.

Routes and frequency of administration of the therapeutic compositions disclosed herein, as well as dosage, will vary from individual to individual, and may be readily established using standard techniques. In general, the pharmaceutical compositions and vaccines may be administered by injection (*e.g.*, intracutaneous,

intramuscular, intravenous or subcutaneous), intranasally (*e.g.*, by aspiration) or orally. Preferably, between 1 and 10 doses may be administered over a 52 week period. Preferably, 6 doses are administered, at intervals of 1 month, and booster vaccinations may be given periodically thereafter. Alternate protocols may be appropriate for individual patients. A suitable dose is an amount of a compound that, when administered as described above, is capable of promoting an anti-tumor immune response, and is at least 10-50% above the basal (*i.e.*, untreated) level. Such response can be monitored by measuring the anti-tumor antibodies in a patient or by vaccine-dependent generation of cytolytic effector cells capable of killing the patient's tumor cells *in vitro*. Such vaccines should also be capable of causing an immune response that leads to an improved clinical outcome (*e.g.*, more frequent remissions, complete or partial or longer disease-free survival) in vaccinated patients as compared to non-vaccinated patients. In general, for pharmaceutical compositions and vaccines comprising one or more polypeptides, the amount of each polypeptide present in a dose ranges from about 100 µg to 5 mg per kg of host. Suitable dose sizes will vary with the size of the patient, but will typically range from about 0.1 mL to about 5 mL.

In general, an appropriate dosage and treatment regimen provides the active compound(s) in an amount sufficient to provide therapeutic and/or prophylactic benefit. Such a response can be monitored by establishing an improved clinical outcome (*e.g.*, more frequent remissions, complete or partial, or longer disease-free survival) in treated patients as compared to non-treated patients. Increases in preexisting immune responses to a prostate tumor protein generally correlate with an improved clinical outcome. Such immune responses may generally be evaluated using standard proliferation, cytotoxicity or cytokine assays, which may be performed using samples obtained from a patient before and after treatment.

#### METHODS FOR DETECTING CANCER

In general, a cancer may be detected in a patient based on the presence of one or more prostate tumor proteins and/or polynucleotides encoding such proteins in a biological sample (for example, blood, sera, urine and/or tumor biopsies) obtained from

the patient. In other words, such proteins may be used as markers to indicate the presence or absence of a cancer such as prostate cancer. In addition, such proteins may be useful for the detection of other cancers. The binding agents provided herein generally permit detection of the level of antigen that binds to the agent in the biological sample. Polynucleotide primers and probes may be used to detect the level of mRNA encoding a tumor protein, which is also indicative of the presence or absence of a cancer. In general, a prostate tumor sequence should be present at a level that is at least three fold higher in tumor tissue than in normal tissue

There are a variety of assay formats known to those of ordinary skill in the art for using a binding agent to detect polypeptide markers in a sample. *See, e.g.,* Harlow and Lane, *Antibodies: A Laboratory Manual*, Cold Spring Harbor Laboratory, 1988. In general, the presence or absence of a cancer in a patient may be determined by (a) contacting a biological sample obtained from a patient with a binding agent; (b) detecting in the sample a level of polypeptide that binds to the binding agent; and (c) comparing the level of polypeptide with a predetermined cut-off value.

In a preferred embodiment, the assay involves the use of binding agent immobilized on a solid support to bind to and remove the polypeptide from the remainder of the sample. The bound polypeptide may then be detected using a detection reagent that contains a reporter group and specifically binds to the binding agent/polypeptide complex. Such detection reagents may comprise, for example, a binding agent that specifically binds to the polypeptide or an antibody or other agent that specifically binds to the binding agent, such as an anti-immunoglobulin, protein G, protein A or a lectin. Alternatively, a competitive assay may be utilized, in which a polypeptide is labeled with a reporter group and allowed to bind to the immobilized binding agent after incubation of the binding agent with the sample. The extent to which components of the sample inhibit the binding of the labeled polypeptide to the binding agent is indicative of the reactivity of the sample with the immobilized binding agent. Suitable polypeptides for use within such assays include full length prostate tumor proteins and portions thereof to which the binding agent binds, as described above.

The solid support may be any material known to those of ordinary skill in the art to which the tumor protein may be attached. For example, the solid support may be a test well in a microtiter plate or a nitrocellulose or other suitable membrane. Alternatively, the support may be a bead or disc, such as glass, fiberglass, latex or a plastic material such as polystyrene or polyvinylchloride. The support may also be a magnetic particle or a fiber optic sensor, such as those disclosed, for example, in U.S. Patent No. 5,359,681. The binding agent may be immobilized on the solid support using a variety of techniques known to those of skill in the art, which are amply described in the patent and scientific literature. In the context of the present invention, the term "immobilization" refers to both noncovalent association, such as adsorption, and covalent attachment (which may be a direct linkage between the agent and functional groups on the support or may be a linkage by way of a cross-linking agent). Immobilization by adsorption to a well in a microtiter plate or to a membrane is preferred. In such cases, adsorption may be achieved by contacting the binding agent, in a suitable buffer, with the solid support for a suitable amount of time. The contact time varies with temperature, but is typically between about 1 hour and about 1 day. In general, contacting a well of a plastic microtiter plate (such as polystyrene or polyvinylchloride) with an amount of binding agent ranging from about 10 ng to about 10  $\mu$ g, and preferably about 100 ng to about 1  $\mu$ g, is sufficient to immobilize an adequate amount of binding agent.

Covalent attachment of binding agent to a solid support may generally be achieved by first reacting the support with a bifunctional reagent that will react with both the support and a functional group, such as a hydroxyl or amino group, on the binding agent. For example, the binding agent may be covalently attached to supports having an appropriate polymer coating using benzoquinone or by condensation of an aldehyde group on the support with an amine and an active hydrogen on the binding partner (*see, e.g.,* Pierce Immunotechnology Catalog and Handbook, 1991, at A12-A13).

In certain embodiments, the assay is a two-antibody sandwich assay. This assay may be performed by first contacting an antibody that has been immobilized

on a solid support, commonly the well of a microtiter plate, with the sample, such that polypeptides within the sample are allowed to bind to the immobilized antibody. Unbound sample is then removed from the immobilized polypeptide-antibody complexes and a detection reagent (preferably a second antibody capable of binding to a different site on the polypeptide) containing a reporter group is added. The amount of detection reagent that remains bound to the solid support is then determined using a method appropriate for the specific reporter group.

More specifically, once the antibody is immobilized on the support as described above, the remaining protein binding sites on the support are typically blocked. Any suitable blocking agent known to those of ordinary skill in the art, such as bovine serum albumin or Tween 20™ (Sigma Chemical Co., St. Louis, MO). The immobilized antibody is then incubated with the sample, and polypeptide is allowed to bind to the antibody. The sample may be diluted with a suitable diluent, such as phosphate-buffered saline (PBS) prior to incubation. In general, an appropriate contact time (*i.e.*, incubation time) is a period of time that is sufficient to detect the presence of polypeptide within a sample obtained from an individual with prostate cancer. Preferably, the contact time is sufficient to achieve a level of binding that is at least about 95% of that achieved at equilibrium between bound and unbound polypeptide. Those of ordinary skill in the art will recognize that the time necessary to achieve equilibrium may be readily determined by assaying the level of binding that occurs over a period of time. At room temperature, an incubation time of about 30 minutes is generally sufficient.

Unbound sample may then be removed by washing the solid support with an appropriate buffer, such as PBS containing 0.1% Tween 20™. The second antibody, which contains a reporter group, may then be added to the solid support. Preferred reporter groups include those groups recited above.

The detection reagent is then incubated with the immobilized antibody-polypeptide complex for an amount of time sufficient to detect the bound polypeptide. An appropriate amount of time may generally be determined by assaying the level of binding that occurs over a period of time. Unbound detection reagent is then removed

and bound detection reagent is detected using the reporter group. The method employed for detecting the reporter group depends upon the nature of the reporter group. For radioactive groups, scintillation counting or autoradiographic methods are generally appropriate. Spectroscopic methods may be used to detect dyes, luminescent groups and fluorescent groups. Biotin may be detected using avidin, coupled to a different reporter group (commonly a radioactive or fluorescent group or an enzyme). Enzyme reporter groups may generally be detected by the addition of substrate (generally for a specific period of time), followed by spectroscopic or other analysis of the reaction products.

To determine the presence or absence of a cancer, such as prostate cancer, the signal detected from the reporter group that remains bound to the solid support is generally compared to a signal that corresponds to a predetermined cut-off value. In one preferred embodiment, the cut-off value for the detection of a cancer is the average mean signal obtained when the immobilized antibody is incubated with samples from patients without the cancer. In general, a sample generating a signal that is three standard deviations above the predetermined cut-off value is considered positive for the cancer. In an alternate preferred embodiment, the cut-off value is determined using a Receiver Operator Curve, according to the method of Sackett et al., *Clinical Epidemiology: A Basic Science for Clinical Medicine*, Little Brown and Co., 1985, p. 106-7. Briefly, in this embodiment, the cut-off value may be determined from a plot of pairs of true positive rates (*i.e.*, sensitivity) and false positive rates (100%-specificity) that correspond to each possible cut-off value for the diagnostic test result. The cut-off value on the plot that is the closest to the upper left-hand corner (*i.e.*, the value that encloses the largest area) is the most accurate cut-off value, and a sample generating a signal that is higher than the cut-off value determined by this method may be considered positive. Alternatively, the cut-off value may be shifted to the left along the plot, to minimize the false positive rate, or to the right, to minimize the false negative rate. In general, a sample generating a signal that is higher than the cut-off value determined by this method is considered positive for a cancer.

In a related embodiment, the assay is performed in a flow-through or strip test format, wherein the binding agent is immobilized on a membrane, such as nitrocellulose. In the flow-through test, polypeptides within the sample bind to the immobilized binding agent as the sample passes through the membrane. A second, labeled binding agent then binds to the binding agent-polypeptide complex as a solution containing the second binding agent flows through the membrane. The detection of bound second binding agent may then be performed as described above. In the strip test format, one end of the membrane to which binding agent is bound is immersed in a solution containing the sample. The sample migrates along the membrane through a region containing second binding agent and to the area of immobilized binding agent. Concentration of second binding agent at the area of immobilized antibody indicates the presence of a cancer. Typically, the concentration of second binding agent at that site generates a pattern, such as a line, that can be read visually. The absence of such a pattern indicates a negative result. In general, the amount of binding agent immobilized on the membrane is selected to generate a visually discernible pattern when the biological sample contains a level of polypeptide that would be sufficient to generate a positive signal in the two-antibody sandwich assay, in the format discussed above. Preferred binding agents for use in such assays are antibodies and antigen-binding fragments thereof. Preferably, the amount of antibody immobilized on the membrane ranges from about 25 ng to about 1 $\mu$ g, and more preferably from about 50 ng to about 500 ng. Such tests can typically be performed with a very small amount of biological sample.

Of course, numerous other assay protocols exist that are suitable for use with the tumor proteins or binding agents of the present invention. The above descriptions are intended to be exemplary only. For example, it will be apparent to those of ordinary skill in the art that the above protocols may be readily modified to use prostate tumor polypeptides to detect antibodies that bind to such polypeptides in a biological sample. The detection of such prostate tumor protein specific antibodies may correlate with the presence of a cancer.

A cancer may also, or alternatively, be detected based on the presence of T cells that specifically react with a prostate tumor protein in a biological sample. Within certain methods, a biological sample comprising CD4<sup>+</sup> and/or CD8<sup>+</sup> T cells isolated from a patient is incubated with a prostate tumor polypeptide, a polynucleotide encoding such a polypeptide and/or an APC that expresses at least an immunogenic portion of such a polypeptide, and the presence or absence of specific activation of the T cells is detected. Suitable biological samples include, but are not limited to, isolated T cells. For example, T cells may be isolated from a patient by routine techniques (such as by Ficoll/Hypaque density gradient centrifugation of peripheral blood lymphocytes). T cells may be incubated *in vitro* for 2-9 days (typically 4 days) at 37°C with prostate tumor polypeptide (*e.g.*, 5 - 25 µg/ml). It may be desirable to incubate another aliquot of a T cell sample in the absence of prostate tumor polypeptide to serve as a control. For CD4<sup>+</sup> T cells, activation is preferably detected by evaluating proliferation of the T cells. For CD8<sup>+</sup> T cells, activation is preferably detected by evaluating cytolytic activity. A level of proliferation that is at least two fold greater and/or a level of cytolytic activity that is at least 20% greater than in disease-free patients indicates the presence of a cancer in the patient.

As noted above, a cancer may also, or alternatively, be detected based on the level of mRNA encoding a prostate tumor protein in a biological sample. For example, at least two oligonucleotide primers may be employed in a polymerase chain reaction (PCR) based assay to amplify a portion of a prostate tumor cDNA derived from a biological sample, wherein at least one of the oligonucleotide primers is specific for (*i.e.*, hybridizes to) a polynucleotide encoding the prostate tumor protein. The amplified cDNA is then separated and detected using techniques well known in the art, such as gel electrophoresis. Similarly, oligonucleotide probes that specifically hybridize to a polynucleotide encoding a prostate tumor protein may be used in a hybridization assay to detect the presence of polynucleotide encoding the tumor protein in a biological sample.

To permit hybridization under assay conditions, oligonucleotide primers and probes should comprise an oligonucleotide sequence that has at least about 60%,



preferably at least about 75% and more preferably at least about 90%, identity to a portion of a polynucleotide encoding a prostate tumor protein that is at least 10 nucleotides, and preferably at least 20 nucleotides, in length. Preferably, oligonucleotide primers and/or probes will hybridize to a polynucleotide encoding a polypeptide disclosed herein under moderately stringent conditions, as defined above. Oligonucleotide primers and/or probes which may be usefully employed in the diagnostic methods described herein preferably are at least 10-40 nucleotides in length. In a preferred embodiment, the oligonucleotide primers comprise at least 10 contiguous nucleotides, more preferably at least 15 contiguous nucleotides, of a DNA molecule having a sequence recited in SEQ ID NO: 1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375 and 381. Techniques for both PCR based assays and hybridization assays are well known in the art (*see, for example, Mullis et al., Cold Spring Harbor Symp. Quant. Biol., 51:263, 1987; Erlich ed., PCR Technology, Stockton Press, NY, 1989*).

One preferred assay employs RT-PCR, in which PCR is applied in conjunction with reverse transcription. Typically, RNA is extracted from a biological sample, such as biopsy tissue, and is reverse transcribed to produce cDNA molecules. PCR amplification using at least one specific primer generates a cDNA molecule, which may be separated and visualized using, for example, gel electrophoresis. Amplification may be performed on biological samples taken from a test patient and from an individual who is not afflicted with a cancer. The amplification reaction may be performed on several dilutions of cDNA spanning two orders of magnitude. A two-fold or greater increase in expression in several dilutions of the test patient sample as compared to the same dilutions of the non-cancerous sample is typically considered positive.

In another embodiment, the disclosed compositions may be used as markers for the progression of cancer. In this embodiment, assays as described above for the diagnosis of a cancer may be performed over time, and the change in the level of reactive polypeptide(s) or polynucleotide evaluated. For example, the assays may be performed every 24-72 hours for a period of 6 months to 1 year, and thereafter

performed as needed. In general, a cancer is progressing in those patients in whom the level of polypeptide or polynucleotide detected increases over time. In contrast, the cancer is not progressing when the level of reactive polypeptide or polynucleotide either remains constant or decreases with time.

Certain *in vivo* diagnostic assays may be performed directly on a tumor. One such assay involves contacting tumor cells with a binding agent. The bound binding agent may then be detected directly or indirectly via a reporter group. Such binding agents may also be used in histological applications. Alternatively, polynucleotide probes may be used within such applications.

As noted above, to improve sensitivity, multiple prostate tumor protein markers may be assayed within a given sample. It will be apparent that binding agents specific for different proteins provided herein may be combined within a single assay. Further, multiple primers or probes may be used concurrently. The selection of tumor protein markers may be based on routine experiments to determine combinations that results in optimal sensitivity. In addition, or alternatively, assays for tumor proteins provided herein may be combined with assays for other known tumor antigens.

#### DIAGNOSTIC KITS

The present invention further provides kits for use within any of the above diagnostic methods. Such kits typically comprise two or more components necessary for performing a diagnostic assay. Components may be compounds, reagents, containers and/or equipment. For example, one container within a kit may contain a monoclonal antibody or fragment thereof that specifically binds to a prostate tumor protein. Such antibodies or fragments may be provided attached to a support material, as described above. One or more additional containers may enclose elements, such as reagents or buffers, to be used in the assay. Such kits may also, or alternatively, contain a detection reagent as described above that contains a reporter group suitable for direct or indirect detection of antibody binding.

Alternatively, a kit may be designed to detect the level of mRNA encoding a prostate tumor protein in a biological sample. Such kits generally comprise

at least one oligonucleotide probe or primer, as described above, that hybridizes to a polynucleotide encoding a prostate tumor protein. Such an oligonucleotide may be used, for example, within a PCR or hybridization assay. Additional components that may be present within such kits include a second oligonucleotide and/or a diagnostic reagent or container to facilitate the detection of a polynucleotide encoding a prostate tumor protein.

The following Examples are offered by way of illustration and not by way of limitation.

## EXAMPLES

### EXAMPLE 1

#### ISOLATION AND CHARACTERIZATION OF PROSTATE TUMOR POLYPEPTIDES

This Example describes the isolation of certain prostate tumor polypeptides from a prostate tumor cDNA library.

A human prostate tumor cDNA expression library was constructed from prostate tumor poly A<sup>+</sup> RNA using a Superscript Plasmid System for cDNA Synthesis and Plasmid Cloning kit (BRL Life Technologies, Gaithersburg, MD 20897) following the manufacturer's protocol. Specifically, prostate tumor tissues were homogenized with polytron (Kinematica, Switzerland) and total RNA was extracted using Trizol reagent (BRL Life Technologies) as directed by the manufacturer. The poly A<sup>+</sup> RNA was then purified using a Qiagen oligotex spin column mRNA purification kit (Qiagen, Santa Clarita, CA 91355) according to the manufacturer's protocol. First-strand cDNA was synthesized using the NotI/Oligo-dT18 primer. Double-stranded cDNA was synthesized, ligated with EcoRI/BAXI adaptors (Invitrogen, San Diego, CA) and digested with NotI. Following size fractionation with Chroma Spin-1000 columns (Clontech, Palo Alto, CA), the cDNA was ligated into the EcoRI/NotI site of pCDNA3.1 (Invitrogen) and transformed into ElectroMax *E. coli* DH10B cells (BRL Life Technologies) by electroporation.

Using the same procedure, a normal human pancreas cDNA expression library was prepared from a pool of six tissue specimens (Clontech). The cDNA libraries were characterized by determining the number of independent colonies, the percentage of clones that carried insert, the average insert size and by sequence analysis. The prostate tumor library contained  $1.64 \times 10^7$  independent colonies, with 70% of clones having an insert and the average insert size being 1745 base pairs. The normal pancreas cDNA library contained  $3.3 \times 10^6$  independent colonies, with 69% of clones

having inserts and the average insert size being 1120 base pairs. For both libraries, sequence analysis showed that the majority of clones had a full length cDNA sequence and were synthesized from mRNA, with minimal rRNA and mitochondrial DNA contamination.

cDNA library subtraction was performed using the above prostate tumor and normal pancreas cDNA libraries, as described by Hara *et al.* (*Blood*, 84:189-199, 1994) with some modifications. Specifically, a prostate tumor-specific subtracted cDNA library was generated as follows. Normal pancreas cDNA library (70 µg) was digested with EcoRI, NotI, and SfuI, followed by a filling-in reaction with DNA polymerase Klenow fragment. After phenol-chloroform extraction and ethanol precipitation, the DNA was dissolved in 100 µl of H<sub>2</sub>O, heat-denatured and mixed with 100 µl (100 µg) of Photoprobe biotin (Vector Laboratories, Burlingame, CA). As recommended by the manufacturer, the resulting mixture was irradiated with a 270 W sunlamp on ice for 20 minutes. Additional Photoprobe biotin (50 µl) was added and the biotinylation reaction was repeated. After extraction with butanol five times, the DNA was ethanol-precipitated and dissolved in 23 µl H<sub>2</sub>O to form the driver DNA.

To form the tracer DNA, 10 µg prostate tumor cDNA library was digested with BamHI and XhoI, phenol chloroform extracted and passed through Chroma spin-400 columns (Clontech). Following ethanol precipitation, the tracer DNA was dissolved in 5 µl H<sub>2</sub>O. Tracer DNA was mixed with 15 µl driver DNA and 20 µl of 2 x hybridization buffer (1.5 M NaCl/10 mM EDTA/50 mM HEPES pH 7.5/0.2% sodium dodecyl sulfate), overlaid with mineral oil, and heat-denatured completely. The sample was immediately transferred into a 68 °C water bath and incubated for 20 hours (long hybridization [LH]). The reaction mixture was then subjected to a streptavidin treatment followed by phenol/chloroform extraction. This process was repeated three more times. Subtracted DNA was precipitated, dissolved in 12 µl H<sub>2</sub>O, mixed with 8 µl driver DNA and 20 µl of 2 x hybridization buffer, and subjected to a hybridization at 68 °C for 2 hours (short hybridization [SH]). After removal of biotinylated double-stranded DNA, subtracted cDNA was ligated into BamHI/XhoI site of chloramphenicol resistant pBCSK<sup>+</sup> (Stratagene, La Jolla, CA 92037) and transformed into ElectroMax *E.*

*coli* DH10B cells by electroporation to generate a prostate tumor specific subtracted cDNA library (referred to as "prostate subtraction 1").

To analyze the subtracted cDNA library, plasmid DNA was prepared from 100 independent clones, randomly picked from the subtracted prostate tumor specific library and grouped based on insert size. Representative cDNA clones were further characterized by DNA sequencing with a Perkin Elmer/Applied Biosystems Division Automated Sequencer Model 373A (Foster City, CA). Six cDNA clones, hereinafter referred to as F1-13, F1-12, F1-16, H1-1, H1-9 and H1-4, were shown to be abundant in the subtracted prostate-specific cDNA library. The determined 3' and 5' cDNA sequences for F1-12 are provided in SEQ ID NO: 2 and 3, respectively, with determined 3' cDNA sequences for F1-13, F1-16, H1-1, H1-9 and H1-4 being provided in SEQ ID NO: 1 and 4-7, respectively.

The cDNA sequences for the isolated clones were compared to known sequences in the gene bank using the EMBL and GenBank databases (release 96). Four of the prostate tumor cDNA clones, F1-13, F1-16, H1-1, and H1-4, were determined to encode the following previously identified proteins: prostate specific antigen (PSA), human glandular kallikrein, human tumor expression enhanced gene, and mitochondria cytochrome C oxidase subunit II. H1-9 was found to be identical to a previously identified human autonomously replicating sequence. No significant homologies to the cDNA sequence for F1-12 were found.

Subsequent studies led to the isolation of a full-length cDNA sequence for F1-12. This sequence is provided in SEQ ID NO: 107, with the corresponding predicted amino acid sequence being provided in SEQ ID NO: 108.

To clone less abundant prostate tumor specific genes, cDNA library subtraction was performed by subtracting the prostate tumor cDNA library described above with the normal pancreas cDNA library and with the three most abundant genes in the previously subtracted prostate tumor specific cDNA library: human glandular kallikrein, prostate specific antigen (PSA), and mitochondria cytochrome C oxidase subunit II. Specifically, 1 µg each of human glandular kallikrein, PSA and mitochondria cytochrome C oxidase subunit II cDNAs in pCDNA3.1 were added to the

driver DNA and subtraction was performed as described above to provide a second subtracted cDNA library hereinafter referred to as the "subtracted prostate tumor specific cDNA library with spike".

Twenty-two cDNA clones were isolated from the subtracted prostate tumor specific cDNA library with spike. The determined 3' and 5' cDNA sequences for the clones referred to as J1-17, L1-12, N1-1862, J1-13, J1-19, J1-25, J1-24, K1-58, K1-63, L1-4 and L1-14 are provided in SEQ ID NOS: 8-9, 10-11, 12-13, 14-15, 16-17, 18-19, 20-21, 22-23, 24-25, 26-27 and 28-29, respectively. The determined 3' cDNA sequences for the clones referred to as J1-12, J1-16, J1-21, K1-48, K1-55, L1-2, L1-6, N1-1858, N1-1860, N1-1861, N1-1864 are provided in SEQ ID NOS: 30-40, respectively. Comparison of these sequences with those in the gene bank as described above, revealed no significant homologies to three of the five most abundant DNA species, (J1-17, L1-12 and N1-1862; SEQ ID NOS: 8-9, 10-11 and 12-13, respectively). Of the remaining two most abundant species, one (J1-12; SEQ ID NO:30) was found to be identical to the previously identified human pulmonary surfactant-associated protein, and the other (K1-48; SEQ ID NO:33) was determined to have some homology to *R. norvegicus* mRNA for 2-arylpropionyl-CoA epimerase. Of the 17 less abundant cDNA clones isolated from the subtracted prostate tumor specific cDNA library with spike, four (J1-16, K1-55, L1-6 and N1-1864; SEQ ID NOS:31, 34, 36 and 40, respectively) were found to be identical to previously identified sequences, two (J1-21 and N1-1860; SEQ ID NOS: 32 and 38, respectively) were found to show some homology to non-human sequences, and two (L1-2 and N1-1861; SEQ ID NOS: 35 and 39, respectively) were found to show some homology to known human sequences. No significant homologies were found to the polypeptides J1-13, J1-19, J1-24, J1-25, K1-58, K1-63, L1-4, L1-14 (SEQ ID NOS: 14-15, 16-17, 20-21, 18-19, 22-23, 24-25, 26-27, 28-29, respectively).

Subsequent studies led to the isolation of full length cDNA sequences for J1-17, L1-12 and N1-1862 (SEQ ID NOS: 109-111, respectively). The corresponding predicted amino acid sequences are provided in SEQ ID NOS: 112-114. L1-12 is also referred to as P501S.

In a further experiment, four additional clones were identified by subtracting a prostate tumor cDNA library with normal prostate cDNA prepared from a pool of three normal prostate poly A+ RNA (referred to as "prostate subtraction 2"). The determined cDNA sequences for these clones, hereinafter referred to as U1-3064, U1-3065, V1-3692 and 1A-3905, are provided in SEQ ID NO: 69-72, respectively. Comparison of the determined sequences with those in the gene bank revealed no significant homologies to U1-3065.

A second subtraction with spike (referred to as "prostate subtraction spike 2") was performed by subtracting a prostate tumor specific cDNA library with spike with normal pancreas cDNA library and further spiked with PSA, J1-17, pulmonary surfactant-associated protein, mitochondrial DNA, cytochrome c oxidase subunit II, N1-1862, autonomously replicating sequence, L1-12 and tumor expression enhanced gene. Four additional clones, hereinafter referred to as V1-3686, R1-2330, 1B-3976 and V1-3679, were isolated. The determined cDNA sequences for these clones are provided in SEQ ID NO:73-76, respectively. Comparison of these sequences with those in the gene bank revealed no significant homologies to V1-3686 and R1-2330.

Further analysis of the three prostate subtractions described above (prostate subtraction 2, subtracted prostate tumor specific cDNA library with spike, and prostate subtraction spike 2) resulted in the identification of sixteen additional clones, referred to as 1G-4736, 1G-4738, 1G-4741, 1G-4744, 1G-4734, 1H-4774, 1H-4781, 1H-4785, 1H-4787, 1H-4796, 1I-4810, 1I-4811, 1J-4876, 1K-4884 and 1K-4896. The determined cDNA sequences for these clones are provided in SEQ ID NOS: 77-92, respectively. Comparison of these sequences with those in the gene bank as described above, revealed no significant homologies to 1G-4741, 1G-4734, 1I-4807, 1J-4876 and 1K-4896 (SEQ ID NOS: 79, 81, 87, 90 and 92, respectively). Further analysis of the isolated clones led to the determination of extended cDNA sequences for 1G-4736, 1G-4738, 1G-4741, 1G-4744, 1H-4774, 1H-4781, 1H-4785, 1H-4787, 1H-4796, 1I-4807, 1J-4876, 1K-4884 and 1K-4896, provided in SEQ ID NOS: 179-188 and 191-193,



respectively, and to the determination of additional partial cDNA sequences for 1I-4810 and 1I-4811, provided in SEQ ID NOS: 189 and 190, respectively.

Additional studies with prostate subtraction spike 2 resulted in the isolation of three more clones. Their sequences were determined as described above and compared to the most recent GenBank. All three clones were found to have homology to known genes, which are Cysteine-rich protein, KIAA0242, and KIAA0280 (SEQ ID NO: 317, 319, and 320, respectively). Further analysis of these clones by Synteni microarray (Synteni, Palo Alto, CA) demonstrated that all three clones were over-expressed in most prostate tumors and prostate BPH, as well as in the majority of normal prostate tissues tested, but low expression in all other normal tissues.

An additional subtraction was performed by subtracting a normal prostate cDNA library with normal pancreas cDNA (referred to as "prostate subtraction 3"). This led to the identification of six additional clones referred to as 1G-4761, 1G-4762, 1H-4766, 1H-4770, 1H-4771 and 1H-4772 (SEQ ID NOS: 93-98). Comparison of these sequences with those in the gene bank revealed no significant homologies to 1G-4761 and 1H-4771 (SEQ ID NOS: 93 and 97, respectively). Further analysis of the isolated clones led to the determination of extended cDNA sequences for 1G-4761, 1G-4762, 1H-4766 and 1H-4772 provided in SEQ ID NOS: 194-196 and 199, respectively, and to the determination of additional partial cDNA sequences for 1H-4770 and 1H-4771, provided in SEQ ID NOS: 197 and 198, respectively.

Subtraction of a prostate tumor cDNA library, prepared from a pool of polyA<sup>+</sup> RNA from three prostate cancer patients, with a normal pancreas cDNA library (prostate subtraction 4) led to the identification of eight clones, referred to as 1D-4297, 1D-4309, 1D-4278, 1D-4288, 1D-4283, 1D-4304, 1D-4296 and 1D-4280 (SEQ ID NOS: 99-107). These sequences were compared to those in the gene bank as described above. No significant homologies were found to 1D-4283 and 1D-4304 (SEQ ID NOS: 103 and 104, respectively). Further analysis of the isolated clones led to the determination of extended cDNA sequences for 1D-4309, 1D-4278, 1D-4288, 1D-4283, 1D-4304, 1D-4296 and 1D-4280, provided in SEQ ID NOS: 200-206, respectively.

cDNA clones isolated in prostate subtraction 1 and prostate subtraction 2, described above, were colony PCR amplified and their mRNA expression levels in prostate tumor, normal prostate and in various other normal tissues were determined using microarray technology (Synteni, Palo Alto, CA). Briefly, the PCR amplification products were dotted onto slides in an array format, with each product occupying a unique location in the array. mRNA was extracted from the tissue sample to be tested, reverse transcribed, and fluorescent-labeled cDNA probes were generated. The microarrays were probed with the labeled cDNA probes, the slides scanned and fluorescence intensity was measured. This intensity correlates with the hybridization intensity. Two clones (referred to as P509S and P510S) were found to be over-expressed in prostate tumor and normal prostate and expressed at low levels in all other normal tissues tested (liver, pancreas, skin, bone marrow, brain, breast, adrenal gland, bladder, testes, salivary gland, large intestine, kidney, ovary, lung, spinal cord, skeletal muscle and colon). The determined cDNA sequences for P509S and P510S are provided in SEQ ID NO: 223 and 224, respectively. Comparison of these sequences with those in the gene bank as described above, revealed some homology to previously identified ESTs.

Additional, studies led to the isolation of the full-length cDNA sequence for P509S. This sequence is provided in SEQ ID NO: 332, with the corresponding predicted amino acid sequence being provided in SEQ ID NO: 339.

## EXAMPLE 2

### DETERMINATION OF TISSUE SPECIFICITY OF PROSTATE TUMOR POLYPEPTIDES

Using gene specific primers, mRNA expression levels for the representative prostate tumor polypeptides F1-16, H1-1, J1-17 (also referred to as P502S), L1-12 (also referred to as P501S), F1-12 (also referred to as P504S) and N1-1862 (also referred to as P503S) were examined in a variety of normal and tumor tissues using RT-PCR.

Briefly, total RNA was extracted from a variety of normal and tumor tissues using Trizol reagent as described above. First strand synthesis was carried out using 1-2  $\mu$ g of total RNA with SuperScript II reverse transcriptase (BRL Life Technologies) at 42 °C for one hour. The cDNA was then amplified by PCR with gene-specific primers. To ensure the semi-quantitative nature of the RT-PCR,  $\beta$ -actin was used as an internal control for each of the tissues examined. First, serial dilutions of the first strand cDNAs were prepared and RT-PCR assays were performed using  $\beta$ -actin specific primers. A dilution was then chosen that enabled the linear range amplification of the  $\beta$ -actin template and which was sensitive enough to reflect the differences in the initial copy numbers. Using these conditions, the  $\beta$ -actin levels were determined for each reverse transcription reaction from each tissue. DNA contamination was minimized by DNase treatment and by assuring a negative PCR result when using first strand cDNA that was prepared without adding reverse transcriptase.

mRNA Expression levels were examined in four different types of tumor tissue (prostate tumor from 2 patients, breast tumor from 3 patients, colon tumor, lung tumor), and sixteen different normal tissues, including prostate, colon, kidney, liver, lung, ovary, pancreas, skeletal muscle, skin, stomach, testes, bone marrow and brain. F1-16 was found to be expressed at high levels in prostate tumor tissue, colon tumor and normal prostate, and at lower levels in normal liver, skin and testes, with expression being undetectable in the other tissues examined. H1-1 was found to be expressed at high levels in prostate tumor, lung tumor, breast tumor, normal prostate, normal colon and normal brain, at much lower levels in normal lung, pancreas, skeletal muscle, skin, small intestine, bone marrow, and was not detected in the other tissues tested. J1-17 (P502S) and L1-12 (P501S) appear to be specifically over-expressed in prostate, with both genes being expressed at high levels in prostate tumor and normal prostate but at low to undetectable levels in all the other tissues examined. N1-1862 (P503S) was found to be over-expressed in 60% of prostate tumors and detectable in normal colon and kidney. The RT-PCR results thus indicate that F1-16, H1-1, J1-17 (P502S), N1-1862 (P503S) and L1-12 (P501S) are either prostate specific or are expressed at significantly elevated levels in prostate.

Further RT-PCR studies showed that F1-12 (P504S) is over-expressed in 60% of prostate tumors, detectable in normal kidney but not detectable in all other tissues tested. Similarly, R1-2330 was shown to be over-expressed in 40% of prostate tumors, detectable in normal kidney and liver, but not detectable in all other tissues tested. U1-3064 was found to be over-expressed in 60% of prostate tumors, and also expressed in breast and colon tumors, but was not detectable in normal tissues.

RT-PCR characterization of R1-2330, U1-3064 and 1D-4279 showed that these three antigens are over-expressed in prostate and/or prostate tumors.

Northern analysis with four prostate tumors, two normal prostate samples, two BPH prostates, and normal colon, kidney, liver, lung, pancreas, skeletal muscle, brain, stomach, testes, small intestine and bone marrow, showed that L1-12 (P501S) is over-expressed in prostate tumors and normal prostate, while being undetectable in other normal tissues tested. J1-17 (P502S) was detected in two prostate tumors and not in the other tissues tested. N1-1862 (P503S) was found to be over-expressed in three prostate tumors and to be expressed in normal prostate, colon and kidney, but not in other tissues tested. F1-12 (P504S) was found to be highly expressed in two prostate tumors and to be undetectable in all other tissues tested.

The microarray technology described above was used to determine the expression levels of representative antigens described herein in prostate tumor, breast tumor and the following normal tissues: prostate, liver, pancreas, skin, bone marrow, brain, breast, adrenal gland, bladder, testes, salivary gland, large intestine, kidney, ovary, lung, spinal cord, skeletal muscle and colon. L1-12 (P501S) was found to be over-expressed in normal prostate and prostate tumor, with some expression being detected in normal skeletal muscle. Both J1-12 and F1-12 (P504S) were found to be over-expressed in prostate tumor, with expression being lower or undetectable in all other tissues tested. N1-1862 (P503S) was found to be expressed at high levels in prostate tumor and normal prostate, and at low levels in normal large intestine and normal colon, with expression being undetectable in all other tissues tested. R1-2330 was found to be over-expressed in prostate tumor and normal prostate, and to be expressed at lower levels in all other tissues tested. 1D-4279 was found to be over-

expressed in prostate tumor and normal prostate, expressed at lower levels in normal spinal cord, and to be undetectable in all other tissues tested.

Further microarray analysis to specifically address the extent to which P501S (SEQ ID NO: 110) was expressed in breast tumor revealed moderate over-expression not only in breast tumor, but also in metastatic breast tumor (2/31), with negligible to low expression in normal tissues. This data suggests that P501S may be over-expressed in various breast tumors as well as in prostate tumors.

The expression levels of 32 ESTs (expressed sequence tags) described by Vasmatzis *et al.* (*Proc. Natl. Acad. Sci. USA* 95:300-304, 1998) in a variety of tumor and normal tissues were examined by microarray technology as described above. Two of these clones (referred to as P1000C and P1001C) were found to be over-expressed in prostate tumor and normal prostate, and expressed at low to undetectable levels in all other tissues tested (normal aorta, thymus, resting and activated PBMC, epithelial cells, spinal cord, adrenal gland, fetal tissues, skin, salivary gland, large intestine, bone marrow, liver, lung, dendritic cells, stomach, lymph nodes, brain, heart, small intestine, skeletal muscle, colon and kidney. The determined cDNA sequences for P1000C and P1001C are provided in SEQ ID NO: 384 and 472, respectively. The sequence of P1001C was found to show some homology to the previously isolated Human mRNA for JM27 protein. No significant homologies were found to the sequence of P1000C.

The expression of the polypeptide encoded by the full length cDNA sequence for F1-12 (also referred to as P504S; SEQ ID NO: 108) was investigated by immunohistochemical analysis. Rabbit-anti-P504S polyclonal antibodies were generated against the full length P504S protein by standard techniques. Subsequent isolation and characterization of the polyclonal antibodies were also performed by techniques well known in the art. Immunohistochemical analysis showed that the P504S polypeptide was expressed in 100% of prostate carcinoma samples tested (n=5).

The rabbit-anti-P504S polyclonal antibody did not appear to label benign prostate cells with the same cytoplasmic granular staining, but rather with light nuclear staining. Analysis of normal tissues revealed that the encoded polypeptide was found to be expressed in some, but not all normal human tissues. Positive

cytoplasmic staining with rabbit-anti-P504S polyclonal antibody was found in normal human kidney, liver, brain, colon and lung-associated macrophages, whereas heart and bone marrow were negative.

This data indicates that the P504S polypeptide is present in prostate cancer tissues, and that there are qualitative and quantitative differences in the staining between benign prostatic hyperplasia tissues and prostate cancer tissues, suggesting that this polypeptide may be detected selectively in prostate tumors and therefore be useful in the diagnosis of prostate cancer.

### EXAMPLE 3

#### ISOLATION AND CHARACTERIZATION OF PROSTATE TUMOR POLYPEPTIDES BY PCR-BASED SUBTRACTION

A cDNA subtraction library, containing cDNA from normal prostate subtracted with ten other normal tissue cDNAs (brain, heart, kidney, liver, lung, ovary, placenta, skeletal muscle, spleen and thymus) and then submitted to a first round of PCR amplification, was purchased from Clontech. This library was subjected to a second round of PCR amplification, following the manufacturer's protocol. The resulting cDNA fragments were subcloned into the vector pT7 Blue T-vector (Novagen, Madison, WI) and transformed into XL-1 Blue MRF' *E. coli* (Stratagene). DNA was isolated from independent clones and sequenced using a Perkin Elmer/Applied Biosystems Division Automated Sequencer Model 373A.

Fifty-nine positive clones were sequenced. Comparison of the DNA sequences of these clones with those in the gene bank, as described above, revealed no significant homologies to 25 of these clones, hereinafter referred to as P5, P8, P9, P18, P20, P30, P34, P36, P38, P39, P42, P49, P50, P53, P55, P60, P64, P65, P73, P75, P76, P79 and P84. The determined cDNA sequences for these clones are provided in SEQ ID NO: 41-45, 47-52 and 54-65, respectively. P29, P47, P68, P80 and P82 (SEQ ID NO: 46, 53 and 66-68, respectively) were found to show some degree of homology to

previously identified DNA sequences. To the best of the inventors' knowledge, none of these sequences have been previously shown to be present in prostate.

Further studies using the PCR-based methodology described above resulted in the isolation of more than 180 additional clones, of which 23 clones were found to show no significant homologies to known sequences. The determined cDNA sequences for these clones are provided in SEQ ID NO: 115-123, 127, 131, 137, 145, 147-151, 153, 156-158 and 160. Twenty-three clones (SEQ ID NO: 124-126, 128-130, 132-136, 138-144, 146, 152, 154, 155 and 159) were found to show some homology to previously identified ESTs. An additional ten clones (SEQ ID NO: 161-170) were found to have some degree of homology to known genes. Larger cDNA clones containing the P20 sequence represent splice variants of a gene referred to as P703P. The determined DNA sequence for the variants referred to as DE1, DE13 and DE14 are provided in SEQ ID NOS: 171, 175 and 177, respectively, with the corresponding predicted amino acid sequences being provided in SEQ ID NO: 172, 176 and 178, respectively. The determined cDNA sequence for an extended spliced form of P703 is provided in SEQ ID NO: 225. The DNA sequences for the splice variants referred to as DE2 and DE6 are provided in SEQ ID NOS: 173 and 174, respectively.

mRNA Expression levels for representative clones in tumor tissues (prostate (n=5), breast (n=2), colon and lung) normal tissues (prostate (n=5), colon, kidney, liver, lung (n=2), ovary (n=2), skeletal muscle, skin, stomach, small intestine and brain), and activated and non-activated PBMC was determined by RT-PCR as described above. Expression was examined in one sample of each tissue type unless otherwise indicated.

P9 was found to be highly expressed in normal prostate and prostate tumor compared to all normal tissues tested except for normal colon which showed comparable expression. P20, a portion of the P703P gene, was found to be highly expressed in normal prostate and prostate tumor, compared to all twelve normal tissues tested. A modest increase in expression of P20 in breast tumor (n=2), colon tumor and lung tumor was seen compared to all normal tissues except lung (1 of 2). Increased expression of P18 was found in normal prostate, prostate tumor and breast tumor

compared to other normal tissues except lung and stomach. A modest increase in expression of P5 was observed in normal prostate compared to most other normal tissues. However, some elevated expression was seen in normal lung and PBMC. Elevated expression of P5 was also observed in prostate tumors (2 of 5), breast tumor and one lung tumor sample. For P30, similar expression levels were seen in normal prostate and prostate tumor, compared to six of twelve other normal tissues tested. Increased expression was seen in breast tumors, one lung tumor sample and one colon tumor sample, and also in normal PBMC. P29 was found to be over-expressed in prostate tumor (5 of 5) and normal prostate (5 of 5) compared to the majority of normal tissues. However, substantial expression of P29 was observed in normal colon and normal lung (2 of 2). P80 was found to be over-expressed in prostate tumor (5 of 5) and normal prostate (5 of 5) compared to all other normal tissues tested, with increased expression also being seen in colon tumor.

Further studies resulted in the isolation of twelve additional clones, hereinafter referred to as 10-d8, 10-h10, 11-c8, 7-g6, 8-b5, 8-b6, 8-d4, 8-d9, 8-g3, 8-h11, 9-f12 and 9-f3. The determined DNA sequences for 10-d8, 10-h10, 11-c8, 8-d4, 8-d9, 8-h11, 9-f12 and 9-f3 are provided in SEQ ID NO: 207, 208, 209, 216, 217, 220, 221 and 222, respectively. The determined forward and reverse DNA sequences for 7-g6, 8-b5, 8-b6 and 8-g3 are provided in SEQ ID NO: 210 and 211; 212 and 213; 214 and 215; and 218 and 219, respectively. Comparison of these sequences with those in the gene bank revealed no significant homologies to the sequence of 9-f3. The clones 10-d8, 11-c8 and 8-h11 were found to show some homology to previously isolated ESTs, while 10-h10, 8-b5, 8-b6, 8-d4, 8-d9, 8-g3 and 9-f12 were found to show some homology to previously identified genes. Further characterization of 7-G6 and 8-G3 showed identity to the known genes PAP and PSA, respectively.

mRNA expression levels for these clones were determined using the micro-array technology described above. The clones 7-G6, 8-G3, 8-B5, 8-B6, 8-D4, 8-D9, 9-F3, 9-F12, 9-H3, 10-A2, 10-A4, 11-C9 and 11-F2 were found to be over-expressed in prostate tumor and normal prostate, with expression in other tissues tested being low or undetectable. Increased expression of 8-F11 was seen in prostate tumor



and normal prostate, bladder, skeletal muscle and colon. Increased expression of 10-H10 was seen in prostate tumor and normal prostate, bladder, lung, colon, brain and large intestine. Increased expression of 9-B1 was seen in prostate tumor, breast tumor, and normal prostate, salivary gland, large intestine and skin, with increased expression of 11-C8 being seen in prostate tumor, and normal prostate and large intestine.

An additional cDNA fragment derived from the PCR-based normal prostate subtraction, described above, was found to be prostate specific by both microarray technology and RT-PCR. The determined cDNA sequence of this clone (referred to as 9-A11) is provided in SEQ ID NO: 226. Comparison of this sequence with those in the public databases revealed 99% identity to the known gene HOXB13.

Further studies led to the isolation of the clones 8-C6 and 8-H7. The determined cDNA sequences for these clones are provided in SEQ ID NO: 227 and 228, respectively. These sequences were found to show some homology to previously isolated ESTs.

PCR and hybridization-based methodologies were employed to obtain longer cDNA sequences for clone P20 (also referred to as P703P), yielding three additional cDNA fragments that progressively extend the 5' end of the gene. These fragments, referred to as P703PDE5, P703P6.26, and P703PX-23 (SEQ ID NO: 326, 328 and 330, with the predicted corresponding amino acid sequences being provided in SEQ ID NO: 327, 329 and 331, respectively) contain additional 5' sequence. P703PDE5 was recovered by screening of a cDNA library (#141-26) with a portion of P703P as a probe. P703P6.26 was recovered from a mixture of three prostate tumor cDNAs and P703PX\_23 was recovered from cDNA library (#438-48). Together, the additional sequences include all of the putative mature serine protease along with part of the putative signal sequence. Further studies using a PCR-based subtraction library of a prostate tumor pool subtracted against a pool of normal tissues (referred to as JP: PCR subtraction) resulted in the isolation of thirteen additional clones, seven of which did not share any significant homology to known GenBank sequences. The determined cDNA sequences for these seven clones (P711P, P712P, novel 23, P774P, P775P, P710P and P768P) are provided in SEQ ID NO: 307-311, 313 and 315, respectively.

The remaining six clones (SEQ ID NO: 316 and 321-325) were shown to share some homology to known genes. By microarray analysis, all thirteen clones showed three or more fold over-expression in prostate tissues, including prostate tumors, BPH and normal prostate as compared to normal non-prostate tissues. Clones P711P, P712P, novel 23 and P768P showed over-expression in most prostate tumors and BPH tissues tested (n=29), and in the majority of normal prostate tissues (n=4), but background to low expression levels in all normal tissues. Clones P774P, P775P and P710P showed comparatively lower expression and expression in fewer prostate tumors and BPH samples, with negative to low expression in normal prostate.

The full-length cDNA for P711P was obtained by employing the partial sequence of SEQ ID NO: 307 to screen a prostate cDNA library. Specifically, a directionally cloned prostate cDNA library was prepared using standard techniques. One million colonies of this library were plated onto LB/Amp plates. Nylon membrane filters were used to lift these colonies, and the cDNAs which were picked up by these filters were denatured and cross-linked to the filters by UV light. The P711P cDNA fragment of SEQ ID NO: 307 was radio-labeled and used to hybridize with these filters. Positive clones were selected, and cDNAs were prepared and sequenced using an automatic Perkin Elmer/Applied Biosystems sequencer. The determined full-length sequence of P711P is provided in SEQ ID NO: 382, with the corresponding predicted amino acid sequence being provided in SEQ ID NO: 383.

Using PCR and hybridization-based methodologies, additional cDNA sequence information was derived for two clones described above, 11-C9 and 9-F3, herein after referred to as P707P and P714P, respectively (SEQ ID NO: 333 and 334). After comparison with the most recent GenBank, P707P was found to be a splice variant of the known gene HoxB13. In contrast, no significant homologies to P714P were found.

Clones 8-B3, P89, P98, P130 and P201 (as disclosed in U.S. Patent Application No. 09/020,956, filed February 9, 1998) were found to be contained within one contiguous sequence, referred to as P705P (SEQ ID NO: 335, with the predicted

amino acid sequence provided in SEQ ID NO: 336), which was determined to be a splice variant of the known gene NKX 3.1.

#### EXAMPLE 4

#### SYNTHESIS OF POLYPEPTIDES

Polypeptides may be synthesized on a Perkin Elmer/Applied Biosystems 430A peptide synthesizer using Fmoc chemistry with HPTU (O-Benzotriazole-N,N,N',N'-tetramethyluronium hexafluorophosphate) activation. A Gly-Cys-Gly sequence may be attached to the amino terminus of the peptide to provide a method of conjugation, binding to an immobilized surface, or labeling of the peptide. Cleavage of the peptides from the solid support may be carried out using the following cleavage mixture: trifluoroacetic acid:ethanedithiol:thioanisole:water:phenol (40:1:2:2:3). After cleaving for 2 hours, the peptides may be precipitated in cold methyl-t-butyl-ether. The peptide pellets may then be dissolved in water containing 0.1% trifluoroacetic acid (TFA) and lyophilized prior to purification by C18 reverse phase HPLC. A gradient of 0%-60% acetonitrile (containing 0.1% TFA) in water (containing 0.1% TFA) may be used to elute the peptides. Following lyophilization of the pure fractions, the peptides may be characterized using electrospray or other types of mass spectrometry and by amino acid analysis.

#### EXAMPLE 5

#### FURTHER ISOLATION AND CHARACTERIZATION OF PROSTATE TUMOR POLYPEPTIDES BY PCR-BASED SUBTRACTION

A cDNA library generated from prostate primary tumor mRNA as described above was subtracted with cDNA from normal prostate. The subtraction was performed using a PCR-based protocol (Clontech), which was modified to generate larger fragments. Within this protocol, tester and driver double stranded cDNA were

separately digested with five restriction enzymes that recognize six-nucleotide restriction sites (MluI, MscI, PvuII, SalI and StuI). This digestion resulted in an average cDNA size of 600 bp, rather than the average size of 300 bp that results from digestion with RsaI according to the Clontech protocol. This modification did not affect the subtraction efficiency. Two tester populations were then created with different adapters, and the driver library remained without adapters.

The tester and driver libraries were then hybridized using excess driver cDNA. In the first hybridization step, driver was separately hybridized with each of the two tester cDNA populations. This resulted in populations of (a) unhybridized tester cDNAs, (b) tester cDNAs hybridized to other tester cDNAs, (c) tester cDNAs hybridized to driver cDNAs and (d) unhybridized driver cDNAs. The two separate hybridization reactions were then combined, and rehybridized in the presence of additional denatured driver cDNA. Following this second hybridization, in addition to populations (a) through (d), a fifth population (e) was generated in which tester cDNA with one adapter hybridized to tester cDNA with the second adapter. Accordingly, the second hybridization step resulted in enrichment of differentially expressed sequences which could be used as templates for PCR amplification with adaptor-specific primers.

The ends were then filled in, and PCR amplification was performed using adaptor-specific primers. Only population (e), which contained tester cDNA that did not hybridize to driver cDNA, was amplified exponentially. A second PCR amplification step was then performed, to reduce background and further enrich differentially expressed sequences.

This PCR-based subtraction technique normalizes differentially expressed cDNAs so that rare transcripts that are overexpressed in prostate tumor tissue may be recoverable. Such transcripts would be difficult to recover by traditional subtraction methods.

In addition to genes known to be overexpressed in prostate tumor, seventy-seven further clones were identified. Sequences of these partial cDNAs are provided in SEQ ID NO: 29 to 305. Most of these clones had no significant homology to database sequences. Exceptions were JPTPN23 (SEQ ID NO: 231; similarity to pig

valosin-containing protein), JPTPN30 (SEQ ID NO: 234; similarity to rat mRNA for proteasome subunit), JPTPN45 (SEQ ID NO: 243; similarity to rat *norvegicus* cytosolic NADP-dependent isocitrate dehydrogenase), JPTPN46 (SEQ ID NO: 244; similarity to human subclone H8 4 d4 DNA sequence), JP1D6 (SEQ ID NO: 265; similarity to *G. gallus* dynein light chain-A), JP8D6 (SEQ ID NO: 288; similarity to human BAC clone RG016J04), JP8F5 (SEQ ID NO: 289; similarity to human subclone H8 3 b5 DNA sequence), and JP8E9 (SEQ ID NO: 299; similarity to human Alu sequence).

Additional studies using the PCR-based subtraction library consisting of a prostate tumor pool subtracted against a normal prostate pool (referred to as PT-PN PCR subtraction) yielded three additional clones. Comparison of the cDNA sequences of these clones with the most recent release of GenBank revealed no significant homologies to the two clones referred to as P715P and P767P (SEQ ID NO: 312 and 314). The remaining clone was found to show some homology to the known gene KIAA0056 (SEQ ID NO: 318). Using microarray analysis to measure mRNA expression levels in various tissues, all three clones were found to be over-expressed in prostate tumors and BPH tissues. Specifically, clone P715P was over-expressed in most prostate tumors and BPH tissues by a factor of three or greater, with elevated expression seen in the majority of normal prostate samples and in fetal tissue, but negative to low expression in all other normal tissues. Clone P767P was over-expressed in several prostate tumors and BPH tissues, with moderate expression levels in half of the normal prostate samples, and background to low expression in all other normal tissues tested.

Further analysis, by microarray as described above, of the PT-PN PCR subtraction library and of a DNA subtraction library containing cDNA from prostate tumor subtracted with a pool of normal tissue cDNAs, led to the isolation of 27 additional clones (SEQ ID NO: 340-365 and 381) which were determined to be over-expressed in prostate tumor. The clones of SEQ ID NO: 341, 342, 345, 347, 348, 349, 351, 355-359, 361, 362 and 364 were also found to be expressed in normal prostate. Expression of all 26 clones in a variety of normal tissues was found to be low or undetectable, with the exception of P544S (SEQ ID NO: 356) which was found to be

expressed in small intestine. Of the 26 clones, 10 (SEQ ID NO: 340-349) were found to show some homology to previously identified sequences. No significant homologies were found to the clones of SEQ ID NO: 350-365.

## EXAMPLE 6

### PEPTIDE PRIMING OF MICE AND PROPAGATION OF CTL LINES

6.1. This Example illustrates the preparation of a CTL cell line specific for cells expressing the P502S gene.

Mice expressing the transgene for human HLA A2.1 (provided by Dr L. Sherman, The Scripps Research Institute, La Jolla, CA) were immunized with P2S#12 peptide (VLGWVAEL; SEQ ID NO: 306), which is derived from the P502S gene (also referred to herein as J1-17, SEQ ID NO: 8), as described by Theobald et al., *Proc. Natl. Acad. Sci. USA* 92:11993-11997, 1995 with the following modifications. Mice were immunized with 100µg of P2S#12 and 120µg of an I-A<sup>b</sup> binding peptide derived from hepatitis B Virus protein emulsified in incomplete Freund's adjuvant. Three weeks later these mice were sacrificed and using a nylon mesh single cell suspensions prepared. Cells were then resuspended at  $6 \times 10^6$  cells/ml in complete media (RPMI-1640; Gibco BRL, Gaithersburg, MD) containing 10% FCS, 2mM Glutamine (Gibco BRL), sodium pyruvate (Gibco BRL), non-essential amino acids (Gibco BRL),  $2 \times 10^{-5}$  M 2-mercaptoethanol, 50U/ml penicillin and streptomycin, and cultured in the presence of irradiated (3000 rads) P2S#12-pulsed (5mg/ml P2S#12 and 10mg/ml β2-microglobulin) LPS blasts (A2 transgenic spleens cells cultured in the presence of 7µg/ml dextran sulfate and 25µg/ml LPS for 3 days). Six days later, cells ( $5 \times 10^5$ /ml) were restimulated with  $2.5 \times 10^6$ /ml peptide pulsed irradiated (20,000 rads) EL4A2Kb cells (Sherman et al, *Science* 258:815-818, 1992) and  $3 \times 10^6$ /ml A2 transgenic spleen feeder cells. Cells were cultured in the presence of 20U/ml IL-2. Cells continued to be restimulated on a weekly basis as described, in preparation for cloning the line.

P2S#12 line was cloned by limiting dilution analysis with peptide pulsed EL4 A2Kb tumor cells ( $1 \times 10^4$  cells/ well) as stimulators and A2 transgenic spleen cells

as feeders (  $5 \times 10^5$  cells/ well) grown in the presence of 30U/ml IL-2. On day 14, cells were restimulated as before. On day 21, clones that were growing were isolated and maintained in culture. Several of these clones demonstrated significantly higher reactivity (lysis) against human fibroblasts (HLA A2.1 expressing) transduced with P502S than against control fibroblasts. An example is presented in Figure 1.

This data indicates that P2S #12 represents a naturally processed epitope of the P502S protein that is expressed in the context of the human HLA A2.1 molecule.

6.2. This Example illustrates the preparation of murine CTL lines and CTL clones specific for cells expressing the P501S gene.

This series of experiments were performed similarly to that described above. Mice were immunized with the P1S#10 peptide (SEQ ID NO: 337), which is derived from the P501S gene (also referred to herein as L1-12, SEQ ID NO: 110). The P1S#10 peptide was derived by analysis of the predicted polypeptide sequence for P501S for potential HLA-A2 binding sequences as defined by published HLA-A2 binding motifs (Parker, KC, *et al*, *J. Immunol.*, 152:163, 1994). P1S#10 peptide was synthesized as described in Example 4, and empirically tested for HLA-A2 binding using a T cell based competition assay. Predicted A2 binding peptides were tested for their ability to compete HLA-A2 specific peptide presentation to an HLA-A2 restricted CTL clone (D150M58), which is specific for the HLA-A2 binding influenza matrix peptide fluM58. D150M58 CTL secretes TNF in response to self-presentation of peptide fluM58. In the competition assay, test peptides at 100-200  $\mu\text{g/ml}$  were added to cultures of D150M58 CTL in order to bind HLA-A2 on the CTL. After thirty minutes, CTL cultured with test peptides, or control peptides, were tested for their antigen dose response to the fluM58 peptide in a standard TNF bioassay. As shown in Figure 3, peptide P1S#10 competes HLA-A2 restricted presentation of fluM58, demonstrating that peptide P1S#10 binds HLA-A2.

Mice expressing the transgene for human HLA A2.1 were immunized as described by Theobald et al. (*Proc. Natl. Acad. Sci. USA* 92:11993-11997, 1995) with the following modifications. Mice were immunized with 62.5 $\mu\text{g}$  of P1S #10 and 120 $\mu\text{g}$

of an I-A<sup>b</sup> binding peptide derived from Hepatitis B Virus protein emulsified in incomplete Freund's adjuvant. Three weeks later these mice were sacrificed and single cell suspensions prepared using a nylon mesh. Cells were then resuspended at  $6 \times 10^6$  cells/ml in complete media (as described above) and cultured in the presence of irradiated (3000 rads) P1S#10-pulsed ( $2\mu\text{g/ml}$  P1S#10 and  $10\text{mg/ml}$   $\beta 2$ -microglobulin) LPS blasts (A2 transgenic spleens cells cultured in the presence of  $7\mu\text{g/ml}$  dextran sulfate and  $25\mu\text{g/ml}$  LPS for 3 days). Six days later cells ( $5 \times 10^5/\text{ml}$ ) were restimulated with  $2.5 \times 10^6/\text{ml}$  peptide-pulsed irradiated (20,000 rads) EL4A2Kb cells, as described above, and  $3 \times 10^6/\text{ml}$  A2 transgenic spleen feeder cells. Cells were cultured in the presence of  $20 \text{ U/ml}$  IL-2. Cells were restimulated on a weekly basis in preparation for cloning. After three rounds of *in vitro* stimulations, one line was generated that recognized P1S#10-pulsed Jurkat A2Kb targets and P501S-transduced Jurkat targets as shown in Figure 4.

A P1S#10-specific CTL line was cloned by limiting dilution analysis with peptide pulsed EL4 A2Kb tumor cells ( $1 \times 10^4$  cells/ well) as stimulators and A2 transgenic spleen cells as feeders ( $5 \times 10^5$  cells/ well) grown in the presence of  $30\text{U/ml}$  IL-2. On day 14, cells were restimulated as before. On day 21, viable clones were isolated and maintained in culture. As shown in Figure 5, five of these clones demonstrated specific cytolytic reactivity against P501S-transduced Jurkat A2Kb targets. This data indicates that P1S#10 represents a naturally processed epitope of the P501S protein that is expressed in the context of the human HLA-A2.1 molecule.

#### EXAMPLE 7

#### ABILITY OF HUMAN T CELLS TO RECOGNIZE PROSTATE TUMOR POLYPEPTIDES

This Example illustrates the ability of T cells specific for a prostate tumor polypeptide to recognize human tumor.



Human CD8<sup>+</sup> T cells were primed *in vitro* to the P2S-12 peptide (SEQ ID NO: 306) derived from P502S (also referred to as J1-17) using dendritic cells according to the protocol of Van Tsai et al. (*Critical Reviews in Immunology* 18:65-75, 1998). The resulting CD8<sup>+</sup> T cell microcultures were tested for their ability to recognize the P2S-12 peptide presented by autologous fibroblasts or fibroblasts which were transduced to express the P502S gene in a  $\gamma$ -interferon ELISPOT assay (*see* Lalvani et al., *J. Exp. Med.* 186:859-865, 1997). Briefly, titrating numbers of T cells were assayed in duplicate on 10<sup>4</sup> fibroblasts in the presence of 3  $\mu$ g/ml human  $\beta_2$ -microglobulin and 1  $\mu$ g/ml P2S-12 peptide or control E75 peptide. In addition, T cells were simultaneously assayed on autologous fibroblasts transduced with the P502S gene or as a control, fibroblasts transduced with HER-2/*neu*. Prior to the assay, the fibroblasts were treated with 10 ng/ml  $\gamma$ -interferon for 48 hours to upregulate class I MHC expression. One of the microcultures (#5) demonstrated strong recognition of both peptide pulsed fibroblasts as well as transduced fibroblasts in a  $\gamma$ -interferon ELISPOT assay. Figure 2A demonstrates that there was a strong increase in the number of  $\gamma$ -interferon spots with increasing numbers of T cells on fibroblasts pulsed with the P2S-12 peptide (solid bars) but not with the control E75 peptide (open bars). This shows the ability of these T cells to specifically recognize the P2S-12 peptide. As shown in Figure 2B, this microculture also demonstrated an increase in the number of  $\gamma$ -interferon spots with increasing numbers of T cells on fibroblasts transduced to express the P502S gene but not the HER-2/*neu* gene. These results provide additional confirmatory evidence that the P2S-12 peptide is a naturally processed epitope of the P502S protein. Furthermore, this also demonstrates that there exists in the human T cell repertoire, high affinity T cells which are capable of recognizing this epitope. These T cells should also be capable of recognizing human tumors which express the P502S gene.

## EXAMPLE 8

PRIMING OF CTL *IN VIVO* USING NAKED DNA IMMUNIZATION WITH A PROSTATE ANTIGEN

The prostate tumor antigen L1-12, as described above, is also referred to as P501S. HLA A2Kb Tg mice (provided by Dr L. Sherman, The Scripps Research Institute, La Jolla, CA) were immunized with 100 µg VR10132-P501S either intramuscularly or intradermally. The mice were immunized three times, with a two week interval between immunizations. Two weeks after the last immunization, immune spleen cells were cultured with Jurkat A2Kb-P501S transduced stimulator cells. CTL lines were stimulated weekly. After two weeks of *in vitro* stimulation, CTL activity was assessed against P501S transduced targets. Two out of 8 mice developed strong anti-P501S CTL responses. These results demonstrate that P501S contains at least one naturally processed A2-restricted CTL epitope.

## EXAMPLE 9

GENERATION OF HUMAN CTL *IN VITRO* USING WHOLE GENE PRIMING AND STIMULATION TECHNIQUES WITH PROSTATE TUMOR ANTIGEN

Using *in vitro* whole-gene priming with P501S-retrovirally transduced autologous fibroblasts (see, for example, Yee et al, *The Journal of Immunology*, 157(9):4079-86, 1996), human CTL lines were derived that specifically recognize autologous fibroblasts transduced with P501S (also known as L1-12), as determined by interferon-γ ELISPOT analysis as described above. Using a panel of HLA-mismatched fibroblast lines transduced with P501S, these CTL lines were shown to be restricted HLA-A2 class I allele. Specifically, dendritic cells (DC) were differentiated from monocyte cultures derived from PBMC of normal human donors by growing for five days in RPMI medium containing 10% human serum, 50 ng/ml human GM-CSF and 30 ng/ml human IL-4. Following culture, DC were infected overnight with recombinant P501S vaccinia virus at a multiplicity of infection (M.O.I) of five, and matured

overnight by the addition of 3 µg/ml CD40 ligand. Virus was inactivated by UV irradiation. CD8+ T cells were isolated using a magnetic bead system, and priming cultures were initiated using standard culture techniques. Cultures were restimulated every 7-10 days using autologous primary fibroblasts retrovirally transduced with P501S. Following four stimulation cycles, CD8+ T cell lines were identified that specifically produced interferon-γ when stimulated with P501S-transduced autologous fibroblasts. The P501S-specific activity could be sustained by the continued stimulation of the cultures with P501S-transduced fibroblasts in the presence of IL-15. A panel of HLA-mismatched fibroblast lines transduced with P501S were generated to define the restriction allele of the response. By measuring interferon-γ in an ELISPOT assay, the P501S specific response was shown to be restricted by HLA-A2. These results demonstrate that a CD8+ CTL response to P501S can be elicited.

#### EXAMPLE 10

##### IDENTIFICATION OF A NATURALLY PROCESSED CTL EPITOPE CONTAINED WITHIN A PROSTATE TUMOR ANTIGEN

The 9-mer peptide p5 (SEQ ID NO: 338) was derived from the P703P antigen (also referred to as P20). The p5 peptide is immunogenic in human HLA-A2 donors and is a naturally processed epitope. Antigen specific CD8+ T cells can be primed following repeated *in vitro* stimulations with monocytes pulsed with p5 peptide. These CTL specifically recognize p5-pulsed target cells in both ELISPOT (as described above) and chromium release assays. Additionally, immunization of HLA-A2 transgenic mice with p5 leads to the generation of CTL lines which recognize a variety of P703P transduced target cells expressing either HLA-A2Kb or HLA-A2. Specifically, HLA-A2 transgenic mice were immunized subcutaneously in the footpad with 100 µg of p5 peptide together with 140 µg of hepatitis B virus core peptide (a Th peptide) in Freund's incomplete adjuvant. Three weeks post immunization, spleen cells from immunized mice were stimulated *in vitro* with peptide-pulsed LPS blasts. CTL activity was assessed by chromium release assay five days after primary *in vitro*

stimulation. Retrovirally transduced cells expressing the control antigen P703P and HLA-A2Kb were used as targets. CTL lines that specifically recognized both p5-pulsed targets as well as P703P-expressing targets were identified.

Human *in vitro* priming experiments demonstrated that the p5 peptide is immunogenic in humans. Dendritic cells (DC) were differentiated from monocyte cultures derived from PBMC of normal human donors by culturing for five days in RPMI medium containing 10% human serum, 50 ng/ml human GM-CSF and 30 ng/ml human IL-4. Following culture, the DC were pulsed with p5 peptide and cultured with GM-CSF and IL-4 together with CD8+ T cell enriched PBMC. CTL lines were restimulated on a weekly basis with p5-pulsed monocytes. Five to six weeks after initiation of the CTL cultures, CTL recognition of p5-pulsed target cells was demonstrated.

#### EXAMPLE 11

##### EXPRESSION OF A BREAST TUMOR-DERIVED ANTIGEN IN PROSTATE

Isolation of the antigen B305D from breast tumor by differential display is described in US Patent Application No. 08/700,014, filed August 20, 1996. Several different splice forms of this antigen were isolated. The determined cDNA sequences for these splice forms are provided in SEQ ID NO: 366-375, with the predicted amino acid sequences corresponding to the sequences of SEQ ID NO: 292, 298 and 301-303 being provided in SEQ ID NO: 299-306, respectively.

The expression levels of B305D in a variety of tumor and normal tissues were examined by real time PCR and by Northern analysis. The results indicated that B305D is highly expressed in breast tumor, prostate tumor, normal prostate tumor and normal testes, with expression being low or undetectable in all other tissues examined (colon tumor, lung tumor, ovary tumor, and normal bone marrow, colon, kidney, liver, lung, ovary, skin, small intestine, stomach).

## EXAMPLE 12

### ELICITATION OF PROSTATE TUMOR ANTIGEN-SPECIFIC CTL RESPONSES IN HUMAN BLOOD

This Example illustrates the ability of a prostate tumor antigen to elicit a CTL response in blood of normal humans.

Autologous dendritic cells (DC) were differentiated from monocyte cultures derived from PBMC of normal donors by growth for five days in RPMI medium containing 10% human serum, 50 ng/ml GM-CSF and 30 ng/ml IL-4. Following culture, DC were infected overnight with recombinant P501S-expressing vaccinia virus at an M.O.I. of 5 and matured for 8 hours by the addition of 2 micrograms/ml CD40 ligand. Virus was inactivated by UV irradiation, CD8<sup>+</sup> cells were isolated by positive selection using magnetic beads, and priming cultures were initiated in 24-well plates. Following five stimulation cycles, CD8<sup>+</sup> lines were identified that specifically produced interferon-gamma when stimulated with autologous P501S-transduced fibroblasts. The P501S-specific activity of cell line 3A-1 could be maintained following additional stimulation cycles on autologous B-LCL transduced with P501S. Line 3A-1 was shown to specifically recognize autologous B-LCL transduced to express P501S, but not EGFP-transduced autologous B-LCL, as measured by cytotoxicity assays (<sup>51</sup>Cr release) and interferon-gamma production (Interferon-gamma Elispot; see above and Lalvani et al., *J. Exp. Med.* 186:859-865, 1997). The results of these assays are presented in Figures 6A and 6B.

## EXAMPLE 13

### IDENTIFICATION OF PROSTATE TUMOR ANTIGENS BY MICROARRAY ANALYSIS

This Example describes the isolation of certain prostate tumor polypeptides from a prostate tumor cDNA library.

A human prostate tumor cDNA expression library as described above was screened using microarray analysis to identify clones that display at least a three fold over-expression in prostate tumor and/or normal prostate tissue, as compared to non-prostate normal tissues (not including testis). 372 clones were identified, and 319 were successfully sequenced. Table I presents a summary of these clones, which are shown in SEQ ID NOs:385-400. Of these sequences SEQ ID NOs:386, 389, 390 and 392 correspond to novel genes, and SEQ ID NOs: 393 and 396 correspond to previously identified sequences. The others (SEQ ID NOs:385, 387, 388, 391, 394, 395 and 397-400) correspond to known sequences, as shown in Table I.

Table I  
Summary of Prostate Tumor Antigens

Known Genes	Previously identified Genes	Novel Genes
T-cell gamma chain	P504S	23379 (SEQ ID NO:389)
Kallikrein	P1000C	23399 (SEQ ID NO:392)
Vector	P501S	23320 (SEQ ID NO:386)
CGI-82 protein mRNA (23319; SEQ ID NO:385)	P503S	23381 (SEQ ID NO:390)
PSA	P510S	
Ald. 6 Dehyd.	P784P	
L-iditol-2 dehydrogenase (23376; SEQ ID NO:388)	P502S	
Ets transcription factor PDEF (22672; SEQ ID NO:398)	P706P	
hTGR (22678; SEQ ID NO:399)	19142.2, bangur.seq (22621; SEQ ID NO:396)	
KIAA0295(22685; SEQ ID NO:400)	5566.1 Wang(23404; SEQ ID NO:393)	
Prostatic Acid Phosphatase(22655; SEQ ID NO:397)	P712P	
transglutaminase (22611; SEQ ID NO:395)	P778P	
HDLBP (23508; SEQ ID NO:394)		
CGI-69 Protein(23367; SEQ ID NO:387)		
KIAA0122(23383; SEQ ID NO:391)		
TEEG		

CGI-82 showed 4.06 fold over-expression in prostate tissues as

compared to other normal tissues tested. It was over-expressed in 43% of prostate tumors, 25% normal prostate, not detected in other normal tissues tested. L-iditol-2 dehydrogenase showed 4.94 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 90% of prostate tumors, 100% of normal prostate, and not detected in other normal tissues tested. Ets transcription factor PDEF showed 5.55 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 47% prostate tumors, 25% normal prostate and not detected in other normal tissues tested. hTGR1 showed 9.11 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 63% of prostate tumors and is not detected in normal tissues tested including normal prostate. KIAA0295 showed 5.59 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 47% of prostate tumors, low to undetectable in normal tissues tested including normal prostate tissues. Prostatic acid phosphatase showed 9.14 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 67% of prostate tumors, 50% of normal prostate, and not detected in other normal tissues tested. Transglutaminase showed 14.84 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 30% of prostate tumors, 50% of normal prostate, and is not detected in other normal tissues tested. High density lipoprotein binding protein (HDLBP) showed 28.06 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 97% of prostate tumors, 75% of normal prostate, and is undetectable in all other normal tissues tested. CGI-69 showed 3.56 fold over-expression in prostate tissues as compared to other normal tissues tested. It is a low abundant gene, detected in more than 90% of prostate tumors, and in 75% normal prostate tissues. The expression of this gene in normal tissues was very low. KIAA0122 showed 4.24 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 57% of prostate tumors, it was undetectable in all normal tissues tested including normal prostate tissues. 19142.2 bangur showed 23.25 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 97% of prostate tumors and 100% of



normal prostate. It was undetectable in other normal tissues tested. 5566.1 Wang showed 3.31 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 97% of prostate tumors, 75% normal prostate and was also over-expressed in normal bone marrow, pancreas, and activated PBMC. Novel clone 23379 showed 4.86 fold over-expression in prostate tissues as compared to other normal tissues tested. It was detectable in 97% of prostate tumors and 75% normal prostate and is undetectable in all other normal tissues tested. Novel clone 23399 showed 4.09 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 27% of prostate tumors and was undetectable in all normal tissues tested including normal prostate tissues. Novel clone 23320 showed 3.15 fold over-expression in prostate tissues as compared to other normal tissues tested. It was detectable in all prostate tumors and 50% of normal prostate tissues. It was also expressed in normal colon and trachea. Other normal tissues do not express this gene at high level.

#### EXAMPLE 14

##### IDENTIFICATION OF PROSTATE TUMOR ANTIGENS BY ELECTRONIC SUBTRACTION

This Example describes the use of an electronic subtraction technique to identify prostate tumor antigens.

Potential prostate-specific genes present in the GenBank human EST database were identified by electronic subtraction (similar to that described by Vasmatizis et al., *Proc. Natl. Acad. Sci. USA* 95:300-304, 1998). The sequences of EST clones (43,482) derived from various prostate libraries were obtained from the GenBank public human EST database. Each prostate EST sequence was used as a query sequence in a BLASTN (National Center for Biotechnology Information) search against the human EST database. All matches considered identical (length of matching sequence >100 base pairs, density of identical matches over this region > 70%) were grouped

(aligned) together in a cluster. Clusters containing more than 200 ESTs were discarded since they probably represented repetitive elements or highly expressed genes such as those for ribosomal proteins. If two or more clusters shared common ESTs, those clusters were grouped together into a "supercluster," resulting in 4,345 prostate superclusters.

Records for the 479 human cDNA libraries represented in the GenBank release were downloaded to create a database of these cDNA library records. These 479 cDNA libraries were grouped into three groups, Plus (normal prostate and prostate tumor libraries, and breast cell lines, in which expression was desired), Minus (libraries from other normal adult tissues, in which expression was not desirable), and Other (fetal tissue, infant tissue, tissues found only in women, non-prostate tumors and cell lines other than prostate cell lines, in which expression was considered to be irrelevant). A summary of these library groups is presented in Table II.

Table II  
Prostate cDNA Libraries and ESTs

Library	# of Libraries	# of ESTs
Plus	25	43,482
Normal	11	18,875
Tumor	11	21,769
Cell lines	3	2,838
Minus	166	
Other	287	

Each supercluster was analyzed in terms of the ESTs within the supercluster. The tissue source of each EST clone was noted and used to classify the superclusters into four groups: Type 1- EST clones found in the Plus group libraries only; no expression detected in Minus or Other group libraries; Type 2- EST clones found in the Plus and Other group libraries only; no expression detected in the Minus group; Type 3- EST clones found in the Plus, Minus and Other group libraries, but the

expression in the Plus group is higher than in either the Minus or Other groups; and Type 4- EST clones found in Plus, Minus and Other group libraries, but the expression in the Plus group is higher than the expression in the Minus group. This analysis identified 4,345 breast clusters (*see* Table III). From these clusters, 3,172 EST clones were ordered from Research Genetics, Inc., and were received as frozen glycerol stocks in 96-well plates.

Table III  
Prostate Cluster Summary

Type	# of Superclusters	# of ESTs Ordered
1	688	677
2	2899	2484
3	85	11
4	673	0
Total	4345	3172

The inserts were PCR-amplified using amino-linked PCR primers for Synteni microarray analysis. When more than one PCR product was obtained for a particular clone, that PCR product was not used for expression analysis. In total, 2,528 clones from the electronic subtraction method were analyzed by microarray analysis to identify electronic subtraction breast clones that had high tumor vs. normal tissue mRNA. Such screens were performed using a Synteni (Palo Alto, CA) microarray, according to the manufacturer's instructions (and essentially as described by Schena et al., *Proc. Natl. Acad. Sci. USA* 93:10614-10619, 1996 and Heller et al., *Proc. Natl. Acad. Sci. USA* 94:2150-2155, 1997). Within these analyses, the clones were arrayed on the chip, which was then probed with fluorescent probes generated from normal and tumor prostate cDNA, as well as various other normal tissues. The slides were scanned and the fluorescence intensity was measured.

Clones with an expression ratio greater than 3 (*i.e.*, the level in prostate tumor cDNA was at least three times the level in normal prostate cDNA) were

identified as prostate tumor-specific sequences (Table IV). The sequences of these clones are provided in SEQ ID NOs:401-453, with certain novel sequences shown in SEQ ID NOs:407, 413, 416-419, 422, 426, 427 and 450.

**Table IV**  
**Prostate-tumor Specific Clones**

SEQ ID NO.	Sequence Designation	Comments
401	22545	previously identified P1000C
402	22547	previously identified P704P
403	22548	known
404	22550	known
405	22551	PSA
406	22552	prostate secretory protein 94
407	22553	novel
408	22558	previously identified P509S
409	22562	glandular kallikrein
410	22565	previously identified P1000C
411	22567	PAP
412	22568	B1006C (breast tumor antigen)
413	22570	novel
414	22571	PSA
415	22572	previously identified P706P
416	22573	novel
417	22574	novel
418	22575	novel
419	22580	novel
420	22581	PAP
421	22582	prostatic secretory protein 94
422	22583	novel
423	22584	prostatic secretory protein 94
424	22585	prostatic secretory protein 94
425	22586	known
426	22587	novel
427	22588	novel
428	22589	PAP
429	22590	known
430	22591	PSA
431	22592	known
432	22593	Previously identified P777P

433	22594	T cell receptor gamma chain
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435	22596	Previously identified P707P
436	22847	PAP
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452	23618	previously identified P1000C
453	23622	previously identified P705P

### EXAMPLE 15

#### FURTHER IDENTIFICATION OF PROSTATE TUMOR ANTIGENS BY MICROARRAY ANALYSIS

This Example describes the isolation of additional prostate tumor polypeptides from a prostate tumor cDNA library.

A human prostate tumor cDNA expression library as described above was screened using microarray analysis to identify clones that display at least a three fold over-expression in prostate tumor and/or normal prostate tissue, as compared to non-prostate normal tissues (not including testis). 142 clones were identified and sequenced. Certain of these clones are shown in SEQ ID NOs:454-467. Of these sequences SEQ ID NOs:459-461 correspond to novel genes. The others (SEQ ID NOs:454-458 and 461-467) correspond to known sequences.

## EXAMPLE 16

## FURTHER CHARACTERIZATION OF PROSTATE TUMOR ANTIGEN P710P

This Example describes the full length cloning of P710P.

The prostate cDNA library described above was screened with the P710P fragment described above. One million colonies were plated on LB/Ampicillin plates. Nylon membrane filters were used to lift these colonies, and the cDNAs picked up by these filters were then denatured and cross-linked to the filters by UV light. The P710P fragment was radiolabeled and used to hybridize with the filters. Positive cDNA clones were selected and their cDNAs recovered and sequenced by an automatic ABI Sequencer. Four sequences were obtained, and are presented in SEQ ID NOs:468-471.

From the foregoing, it will be appreciated that, although specific embodiments of the invention have been described herein for the purposes of illustration, various modifications may be made without deviating from the spirit and scope of the invention. Accordingly, the present invention is not limited except as by the appended claims.

## CLAIMS

1. An isolated polypeptide comprising at least an immunogenic portion of a prostate tumor protein, or a variant thereof, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

(a) sequences recited in any one of SEQ ID NOs:2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-471 or 472;

(b) sequences that hybridize to any of the foregoing sequences under moderately stringent conditions; and

(c) complements of any of the sequence of (a) or (b).

2. An isolated polypeptide according to claim 1, wherein the polypeptide comprises an amino acid sequence that is encoded by a polynucleotide sequence recited in any one of SEQ ID NOs:2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-471 or 472, or a complement of any of the foregoing polynucleotide sequences.

3. An isolated polypeptide comprising a sequence recited in any one of SEQ ID NO: 108, 112, 113, 114, 172, 176, 178, 327, 329, 331, 339 and 383.

4. An isolated polynucleotide encoding at least 15 amino acid residues of a prostate tumor protein, or a variant thereof that differs in one or more

substitutions, deletions, additions and/or insertions such that the ability of the variant to react with antigen-specific antisera is not substantially diminished, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide comprising a sequence recited in any one of SEQ ID NOs:2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-471 or 472, or a complement of any of the foregoing sequences.

5. An isolated polynucleotide encoding a prostate tumor protein, or a variant thereof, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide comprising a sequence recited in any one of SEQ ID NOs:2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-471 or 472, or a complement of any of the foregoing sequences.

6. An isolated polynucleotide comprising a sequence recited in any one of SEQ ID NOs:2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-471 or 472.

7. An isolated polynucleotide comprising a sequence that hybridizes, under moderately stringent conditions, to a sequence recited in any one of



SEQ ID NOs:2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-471 or 472.

8. An isolated polynucleotide complementary to a polynucleotide according to any one of claims 4-7.

9. An expression vector comprising a polynucleotide according to any one of claims 4-7.

10. A host cell transformed or transfected with an expression vector according to claim 9.

11. An expression vector comprising a polynucleotide according claim 8.

12. A host cell transformed or transfected with an expression vector according to claim 11.

13. A pharmaceutical composition comprising a polypeptide according to claim 1, in combination with a physiologically acceptable carrier.

14. A vaccine comprising a polypeptide according to claim 1, in combination with a non-specific immune response enhancer.

15. A vaccine according to claim 14, wherein the non-specific immune response enhancer is an adjuvant.

16. A vaccine according to claim 14, wherein the non-specific immune response enhancer induces a predominantly Type I response.

17. A pharmaceutical composition comprising a polynucleotide according to claim 4, in combination with a physiologically acceptable carrier.

18. A vaccine comprising a polynucleotide according to claim 4, in combination with a non-specific immune response enhancer.

19. A vaccine according to claim 18, wherein the non-specific immune response enhancer is an adjuvant.

20. A vaccine according to claim 18, wherein the non-specific immune response enhancer induces a predominantly Type I response.

21. An isolated antibody, or antigen-binding fragment thereof, that specifically binds to a prostate tumor protein that comprises an amino acid sequence that is encoded by a polynucleotide sequence recited in any one of SEQ ID NOs:2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-471 or 472 or a complement of any of the foregoing polynucleotide sequences.

22. A pharmaceutical composition comprising an antibody or fragment thereof according to claim 18, in combination with a physiologically acceptable carrier.

23. A pharmaceutical composition comprising an antigen-presenting cell that expresses a polypeptide according to claim 1, in combination with a pharmaceutically acceptable carrier or excipient.

24. A pharmaceutical composition according to claim 23, wherein the antigen presenting cell is a dendritic cell or a macrophage.

25. A vaccine comprising an antigen-presenting cell that expresses a polypeptide according to claim 1, in combination with a non-specific immune response enhancer.

26. A vaccine according to claim 25, wherein the non-specific immune response enhancer is an adjuvant.

27. A vaccine according to claim 25, wherein the non-specific immune response enhancer induces a predominantly Type I response.

28. A vaccine according to claim 25, wherein the antigen-presenting cell is a dendritic cell.

29. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of a polypeptide according to claim 1, and thereby inhibiting the development of a cancer in the patient.

30. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of a polynucleotide according to claim 4, and thereby inhibiting the development of a cancer in the patient.

31. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of an antibody or antigen-

binding fragment thereof according to claim 21, and thereby inhibiting the development of a cancer in the patient.

32. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of an antigen-presenting cell that expresses a polypeptide according to claim 1, and thereby inhibiting the development of a cancer in the patient.

33. A method according to claim 32, wherein the antigen-presenting cell is a dendritic cell.

34. A method according to any one of claims 29-32, wherein the cancer is prostate cancer.

35. A fusion protein comprising at least one polypeptide according to claim 1.

36. A fusion protein according to claim 35, wherein the fusion protein comprises an expression enhancer that increases expression of the fusion protein in a host cell transfected with a polynucleotide encoding the fusion protein.

37. A fusion protein according to claim 35, wherein the fusion protein comprises a T helper epitope that is not present within the polypeptide of claim 1.

38. A fusion protein according to claim 35, wherein the fusion protein comprises an affinity tag.

39. An isolated polynucleotide encoding a fusion protein according to claim 35.

40. A pharmaceutical composition comprising a fusion protein according to claim 32, in combination with a physiologically acceptable carrier.

41. A vaccine comprising a fusion protein according to claim 35, in combination with a non-specific immune response enhancer.

42. A vaccine according to claim 41, wherein the non-specific immune response enhancer is an adjuvant.

43. A vaccine according to claim 41, wherein the non-specific immune response enhancer induces a predominantly Type I response.

44. A pharmaceutical composition comprising a polynucleotide according to claim 40, in combination with a physiologically acceptable carrier.

45. A vaccine comprising a polynucleotide according to claim 40, in combination with a non-specific immune response enhancer.

46. A vaccine according to claim 45, wherein the non-specific immune response enhancer is an adjuvant.

47. A vaccine according to claim 45, wherein the non-specific immune response enhancer induces a predominantly Type I response.

48. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of a pharmaceutical composition according to claim 40 or claim 44.

49. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of a vaccine according to claim 41 or claim 45.

50. A method for removing tumor cells from a biological sample, comprising contacting a biological sample with T cells that specifically react with a prostate tumor protein, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

(i) polynucleotides recited in any one of SEQ ID NOs:1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 or 384-472; and

(ii) complements of the foregoing polynucleotides;

wherein the step of contacting is performed under conditions and for a time sufficient to permit the removal of cells expressing the prostate tumor protein from the sample.

51. A method according to claim 50, wherein the biological sample is blood or a fraction thereof.

52. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient a biological sample treated according to the method of claim 50.

53. A method for stimulating and/or expanding T cells specific for a prostate tumor protein, comprising contacting T cells with one or more of:

(i) a polypeptide according to claim 1;

(ii) a polypeptide encoded by a polynucleotide comprising a sequence provided in any one of SEQ ID NOs:1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 or 384-472;

(iii) a polynucleotide encoding a polypeptide of (i) or (ii); and/or

(iv) an antigen presenting cell that expresses a polypeptide of (i) or (ii);

under conditions and for a time sufficient to permit the stimulation and/or expansion of T cells.

54. An isolated T cell population, comprising T cells prepared according to the method of claim 53.

55. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of a T cell population according to claim 54.

56. A method for inhibiting the development of a cancer in a patient, comprising the steps of:

(a) incubating CD4<sup>+</sup> and/or CD8<sup>+</sup> T cells isolated from a patient with at least one component selected from the group consisting of:

(i) a polypeptide according to claim 1;

(ii) a polypeptide encoded by a polynucleotide comprising a sequence of any one of SEQ ID NOs:1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 or 384-472;

(iii) a polynucleotide encoding a polypeptide of (i) or (ii); or

(iv) an antigen-presenting cell that expresses a polypeptide of (i) or (ii);

such that T cells proliferate; and

(b) administering to the patient an effective amount of the proliferated T cells, and thereby inhibiting the development of a cancer in the patient.

57. A method for inhibiting the development of a cancer in a patient, comprising the steps of:

(a) incubating CD4<sup>+</sup> and/or CD8<sup>+</sup> T cells isolated from a patient with at least one component selected from the group consisting of:

- (i) a polypeptide according to claim 1;
- (ii) a polypeptide encoded by a polynucleotide comprising a sequence of any one of SEQ ID NOs: 1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 or 384-472;
- (iii) a polynucleotide encoding a polypeptide of (i) or (ii); or
- (iv) an antigen-presenting cell that expresses a polypeptide of (i) or (ii);

such that T cells proliferate;

- (b) cloning at least one proliferated cell; and
- (c) administering to the patient an effective amount of the cloned T cells, and thereby inhibiting the development of a cancer in the patient.

58. A method for determining the presence or absence of a cancer in a patient, comprising the steps of:

(a) contacting a biological sample obtained from a patient with a binding agent that binds to a prostate tumor protein, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

(i) polynucleotides recited in any one of SEQ ID NOs: 1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 or 384-472; and

(ii) complements of the foregoing polynucleotides;

(b) detecting in the sample an amount of polypeptide that binds to the binding agent; and

(c) comparing the amount of polypeptide to a predetermined cut-off value, and therefrom determining the presence or absence of a cancer in the patient.



59. A method according to claim 58, wherein the binding agent is an antibody.

60. A method according to claim 59, wherein the antibody is a monoclonal antibody.

61. A method according to claim 58, wherein the cancer is prostate cancer.

62. A method for monitoring the progression of a cancer in a patient, comprising the steps of:

(a) contacting a biological sample obtained from a patient at a first point in time with a binding agent that binds to a prostate tumor protein, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence recited in any one of SEQ ID NOs:1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 or 384-472, or a complement of any of the foregoing polynucleotides;

(b) detecting in the sample an amount of polypeptide that binds to the binding agent;

(c) repeating steps (a) and (b) using a biological sample obtained from the patient at a subsequent point in time; and

(d) comparing the amount of polypeptide detected in step (c) to the amount detected in step (b) and therefrom monitoring the progression of the cancer in the patient.

63. A method according to claim 62, wherein the binding agent is an antibody.

64. A method according to claim 63, wherein the antibody is a monoclonal antibody.

65. A method according to claim 62, wherein the cancer is a prostate cancer.

66. A method for determining the presence or absence of a cancer in a patient, comprising the steps of:

(a) contacting a biological sample obtained from a patient with an oligonucleotide that hybridizes to a polynucleotide that encodes a prostate tumor protein, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence recited in any one of SEQ ID NOs:1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 or 384-472, or a complement of any of the foregoing polynucleotides;

(b) detecting in the sample an amount of a polynucleotide that hybridizes to the oligonucleotide; and

(c) comparing the amount of polynucleotide that hybridizes to the oligonucleotide to a predetermined cut-off value, and therefrom determining the presence or absence of a cancer in the patient.

67. A method according to claim 66, wherein the amount of polynucleotide that hybridizes to the oligonucleotide is determined using a polymerase chain reaction.

68. A method according to claim 66, wherein the amount of polynucleotide that hybridizes to the oligonucleotide is determined using a hybridization assay.

69. A method for monitoring the progression of a cancer in a patient, comprising the steps of:

(a) contacting a biological sample obtained from a patient with an oligonucleotide that hybridizes to a polynucleotide that encodes a prostate tumor

protein, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence recited in any one of SEQ ID NOs:1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 or 384-472, or a complement of any of the foregoing polynucleotides;

(b) detecting in the sample an amount of a polynucleotide that hybridizes to the oligonucleotide;

(c) repeating steps (a) and (b) using a biological sample obtained from the patient at a subsequent point in time; and

(d) comparing the amount of polynucleotide detected in step (c) to the amount detected in step (b) and therefrom monitoring the progression of the cancer in the patient.

70. A method according to claim 69, wherein the amount of polynucleotide that hybridizes to the oligonucleotide is determined using a polymerase chain reaction.

71. A method according to claim 69, wherein the amount of polynucleotide that hybridizes to the oligonucleotide is determined using a hybridization assay.

72. A diagnostic kit, comprising:

- (a) one or more antibodies according to claim 21; and
- (b) a detection reagent comprising a reporter group.

73. A kit according to claim 72, wherein the antibodies are immobilized on a solid support.

74. A kit according to claim 73, wherein the solid support comprises nitrocellulose, latex or a plastic material.

75. A kit according to claim 72, wherein the detection reagent comprises an anti-immunoglobulin, protein G, protein A or lectin.

76. A kit according to claim 72, wherein the reporter group is selected from the group consisting of radioisotopes, fluorescent groups, luminescent groups, enzymes, biotin and dye particles.

77. An oligonucleotide comprising 10 to 40 nucleotides that hybridize under moderately stringent conditions to a polynucleotide that encodes a prostate tumor protein, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence recited in any one of SEQ ID NOs:2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-471 or 472, or a complement of any of the foregoing polynucleotides.

78. A oligonucleotide according to claim 77, wherein the oligonucleotide comprises 10-40 nucleotides recited in any one of SEQ ID NOs:2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-471 or 472.

79. A diagnostic kit, comprising:  
(a) an oligonucleotide according to claim 77; and  
(b) a diagnostic reagent for use in a polymerase chain reaction or hybridization assay.

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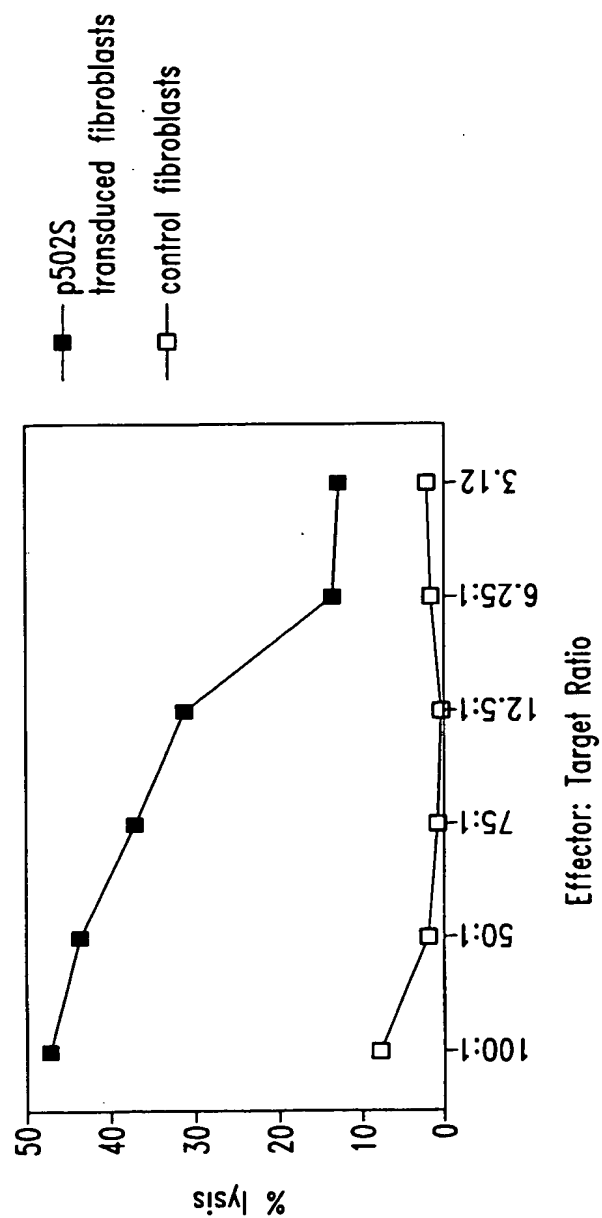
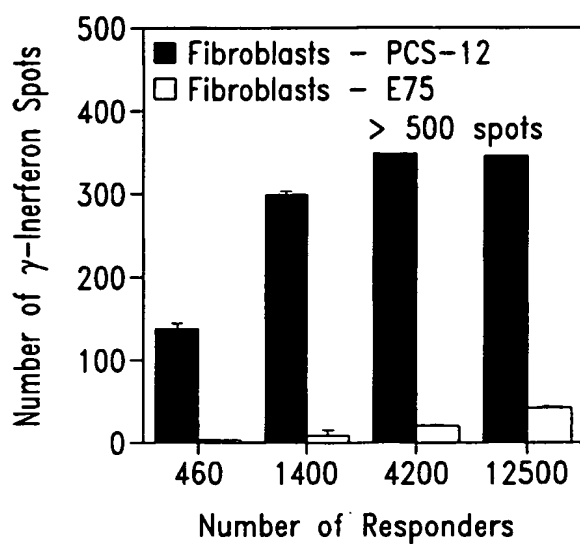
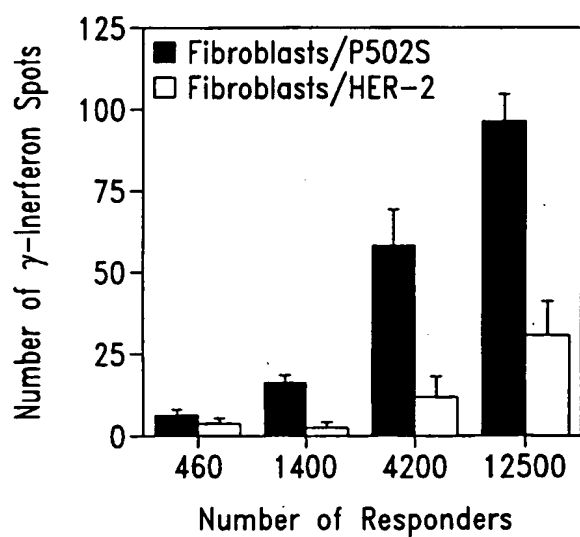


Fig. 1

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*Fig. 2A**Fig. 2B*

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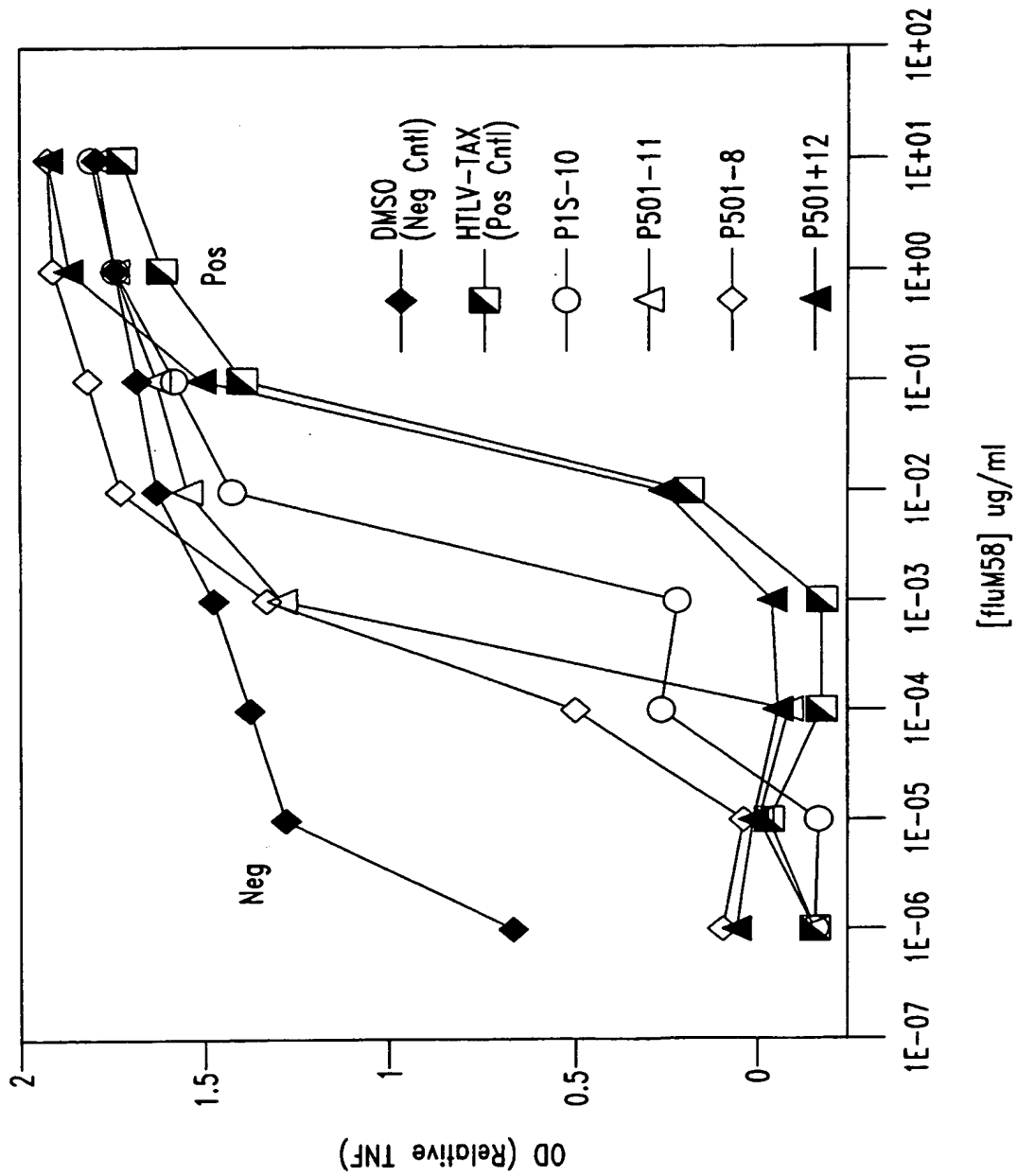


Fig. 3

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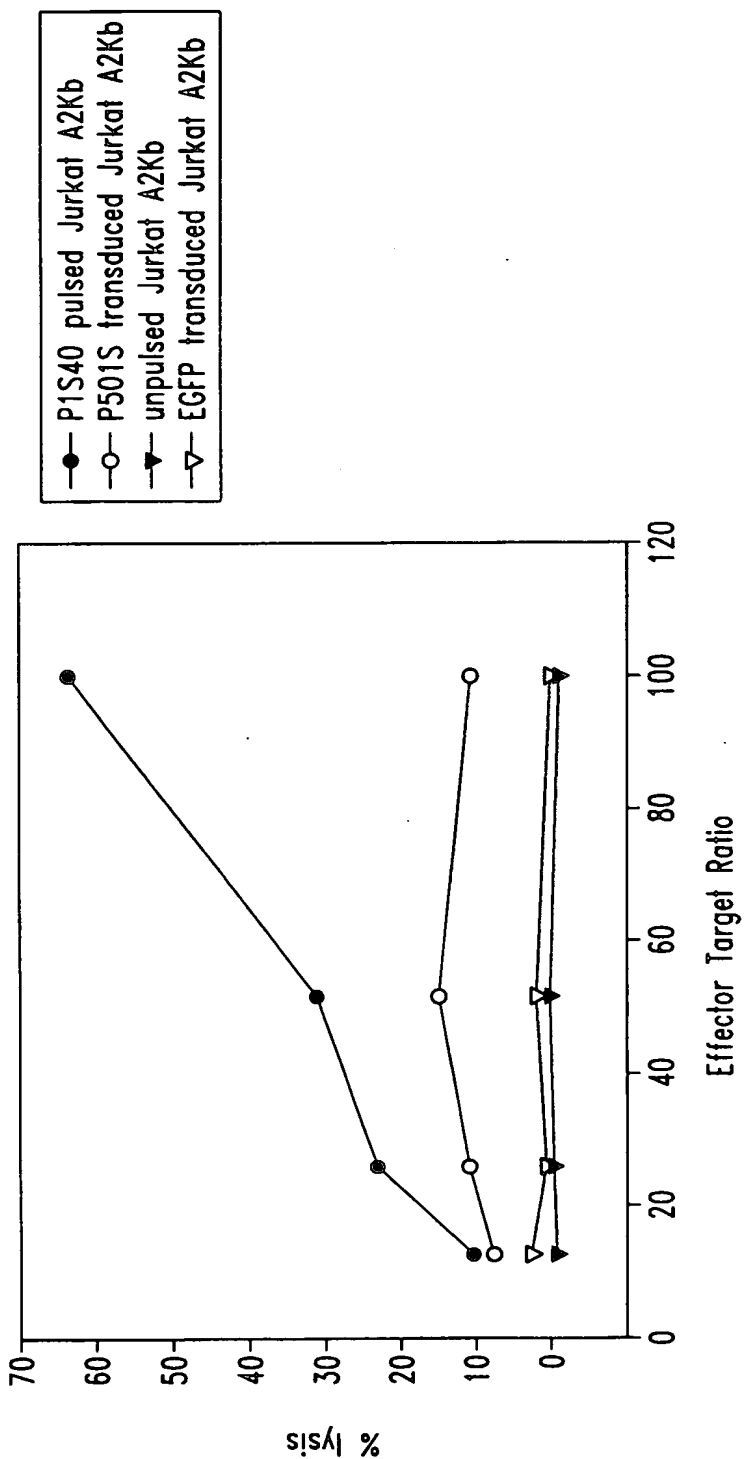
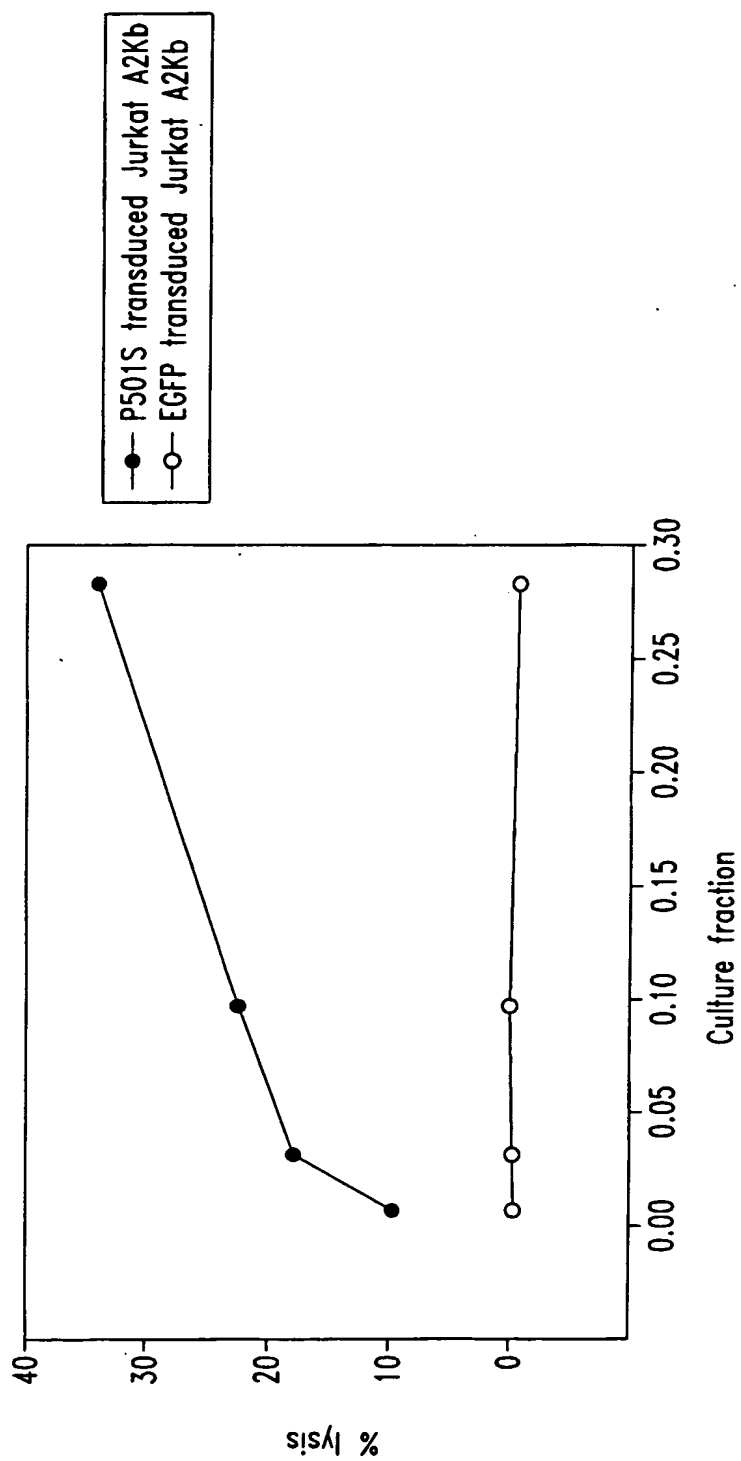


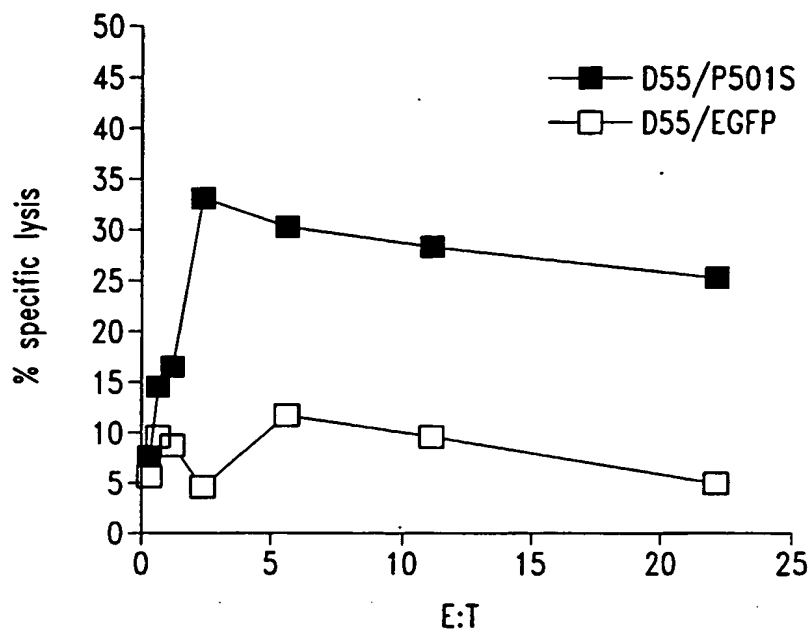
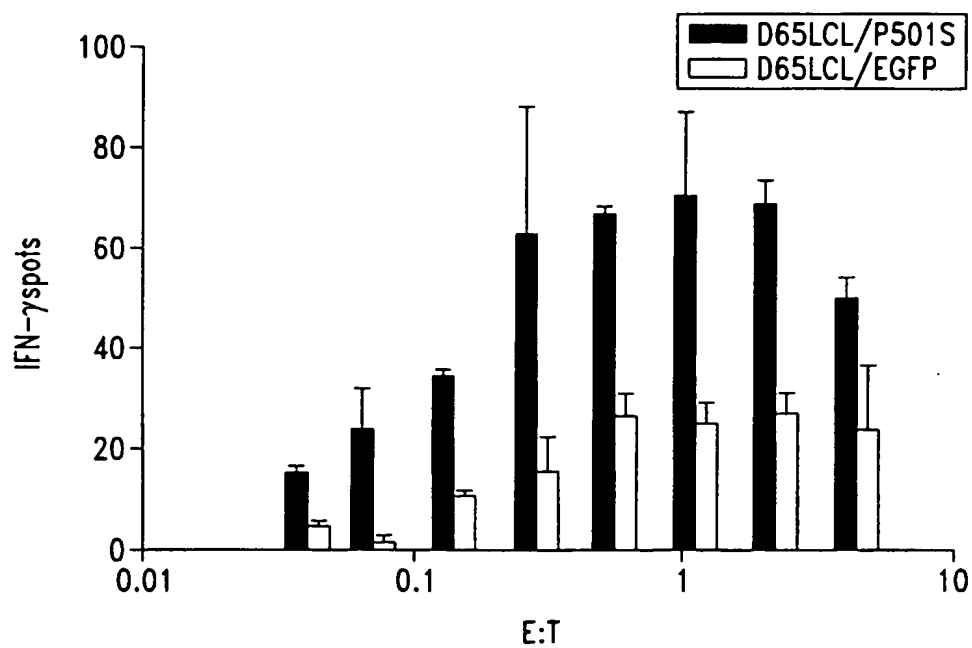
Fig. 4



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*Fig. 5*

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*Fig. 6A**Fig. 6B*

## SEQUENCE LISTING

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<120> COMPOSITIONS AND METHODS FOR THE THERAPY AND  
DIAGNOSIS OF PROSTATE CANCER

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gccgccaccg	cgggtggagct	ccagcttttg	ttcccttttag	tgagggttaa	ttgcgcgctt	480

ggcgtaatca	tgggtcatagc	tgtttcctgt	gtgaaattgt	tatccgctca	caattccccc	540
aacatacgag	ccggaacata	aagtgttaag	cctgggggtgc	ctaatagantg	agctaactcn	600
cattaattgc	gttgcgctca	ctgcccgtt	tccagtcggg	aaaactgtcg	tgccactgcn	660
ttantgaatc	ngccaccccc	cgggaaaagg	cggttgcntt	ttgggcctct	tccgctttcc	720
tcgctcattg	atcctngcnc	ccggtcttcg	gctgcggnga	acggttcact	cctcaaaggc	780
ggtntnccgg	ttatccccaa	acnggggata	ccngga			816

<210> 3  
 <211> 773  
 <212> DNA  
 <213> Homo sapien  
  
 <220>  
 <221> misc\_feature  
 <222> (1)...(773)  
 <223> n = A,T,C or G

<400> 3						
cttttgaaag	aagggatggc	tgggggtgtt	aacagcagag	gtgcagggcg	ggggctcacg	60
tcctgtcct	cactggtgat	aaacgagccc	cgttccttgt	tgtgatcatg	atgaacaacc	120
tcctcaaaag	tcagaaccgg	agtcacacag	gcattctgtc	cgtaaaagat	ttgacaccac	180
tctgccttcg	tcttctttgc	aaatacatct	gcaaacttct	tcttcatttc	tgcccaatca	240
tccatgtca	tctgattggg	aagttcatca	gactttagtc	canntccttt	gatcagcagc	300
tcgtagaact	ggggttctat	tgctccaaca	gccatgaatt	ccccatctgc	tgctctgtaa	360
gtcgtataga	aaggtgctcc	accatccaac	atgttctgtc	ctcgaggggg	ggcccggtac	420
ccaattcgcc	ctatantgag	tcgtattacg	cgcgctcact	ggccgtcgtt	ttacaacgtc	480
gtgactggga	aaaccctggg	cgttaccaac	ttaatcgctt	tgacgacat	ccccctttcg	540
ccagctgggc	gtaatancca	aaaggccccg	accgatcgcc	cttccaacag	ttgcgcacct	600
gaatgggnaa	atgggacccc	cctgttaccg	cgcattnaac	ccccgcnggg	tttngttgtt	660
acccccacnt	nnaccgctta	cactttgcc	gcgccttanc	gcccgtccc	tttnccttt	720
cttcccttcc	tttncnccn	ctttcccccg	gggtttcccc	cntcaaaccc	cna	773

<210> 4  
 <211> 828  
 <212> DNA  
 <213> Homo sapien  
  
 <220>  
 <221> misc\_feature  
 <222> (1)...(828)  
 <223> n = A,T,C or G

<400> 4						
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aatgggcaga	cacaggtgta	tgccaatgtt	tctgaaatgg	gtataatttc	gtcctctcct	120
tcggaacact	ggctgtctct	gaagacttct	cgctcagttt	cagtgaggac	acacacaaaag	180
acgtgggtga	ccatgttggt	tgtgggggtgc	agagatggga	gggggtgggc	ccaccctgga	240
agagtggaca	gtgacacaag	gtggacactc	tctacagatc	actgaggata	agctggagcc	300
acaatgcatg	aggcacacac	acagcaagga	tgacnctgta	aacatagccc	acgtgtcct	360
gngggcactg	ggaagcctan	atnaggccgt	gagcanaaaag	aaggggagga	tccactagtt	420
ctanagcggc	cgccaccgcg	gtgganctcc	anccttttgt	cccttttagtg	agggttaatt	480
gcgcgcttgg	cntaatcatg	gtcatanctn	tttctgtgtg	gaaattgtta	tccgctcaca	540
attccacaca	acatacganc	cggaacata	aantgtaaac	ctgggggtgcc	taatgantga	600
ctaactcaca	ttaattgcgt	tgcgctcact	gcccgttttc	caatcnggaa	acctgtcttg	660
ccncttgcat	tnatgaatcn	gccaaccccc	ggggaaaagg	gtttgcgttt	tgggcgctct	720
tccgcttcc	cnctcantta	ntccctncnc	tcggtcattc	cggtgcngc	aaaccggttc	780
accnctcca	aaggggggtat	tccgggttcc	ccnaatccgg	gganance		828

<210> 5  
 <211> 834  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(834)  
 <223> n = A,T,C or G

<400> 5  
 tttttttttt tttttactga tagatggaat ttattaagct tttcacatgt gatagcacat 60  
 agttttaatt gcatccaaag tactaacaaa aactctagca atcaagaatg gcagcatggt 120  
 attttataac aatcaacacc tgtggctttt aaaatttggt tttcataaga taattttatac 180  
 tgaagtaaat ctagccatgc ttttaaaaaa tgcttttaggt cactccaagc ttggcagtta 240  
 acatttggca taaacaataa taaaacaatc acaatttaat aaataacaaa tacaacattg 300  
 taggccataa tcataacag tataaggaaa aggtggtagt gttgagtaag cagttattag 360  
 aatagaatac cttggcctct atgcaaatat gtctagacac tttgattcac tcagccctga 420  
 cattcagttt tcaaagtagg agacagggtc tacagtatca ttttacagtt tccaacacat 480  
 tgaaaacaag tagaaaatga tgagttgatt tttattaatg cattacatcc tcaagagtta 540  
 tcaccaaccc ctcagttata aaaaattttc aagttatatt agtcatataa cttgggtgtgc 600  
 ttatttttaa ttagtgctaa atggattaag tgaagacaac aatgggtcccc taatgtgatt 660  
 gatattggtc atttttacca gcttctaaat ctnaactttc aggcctttga actggaacat 720  
 tgnatnacag tgttccanag ttncaacctt ctggaacatt acagtgtgct tgattcaaaa 780  
 tgttattttg ttaaaaatta aattttaacc tggtggaaaa ataatttgaa atna 834

<210> 6  
 <211> 818  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(818)  
 <223> n = A,T,C or G

<400> 6  
 tttttttttt tttttttttt aagaccctca tcaatagatg gagacataca gaaatagtca 60  
 aaccacatct acaaaatgcc agtatcaggc ggcggcttcg aagccaaagt gatgtttgga 120  
 tgtaaagtga aatattagtt ggcggatgaa gcagatagtg aggaaagttg agccaataat 180  
 gacgtgaagt ccgtggaagc ctgtggctac aaaaaatgtt gagccgtaga tgccgtcgga 240  
 aatgggtgaag ggagactcga agtactctga ggctttagg agggtaaaat agagaccag 300  
 taaaattgta ataagcagtg cttgaattat ttggtttcgg ttgttttcta ttagactatg 360  
 gtgagctcag gtgattgata ctccctgatgc gagtaatacg gatgtgttta ggagtgggac 420  
 ttctaggggg tttagcgggg tgatgcctgt tgggggccag tgccctccta gttggggggg 480  
 aggggctagg ctggagtggt aaaaggctca gaaaaatcct gcgaagaaaa aaacttctga 540  
 ggtaataaat aggattatcc cgtatcgaag gccttttttg acaggtggtg tgtggtggcc 600  
 ttggtatgtg ctttctcgtg ttacatcgcg ccatcattgg tatatggta gtgtgttggg 660  
 ttantangg ctantatgaa gaacttttgg antggaatta aatcaatngc ttggccggaa 720  
 gtcattanga nggctnaaaa ggccctgtta ngggtctggg ctnggtttta cccnaccat 780  
 ggaatncncc ccccggaacna ntgnatccct attcttaa 818

<210> 7  
 <211> 817  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(817)  
 <223> n = A,T,C or G

<400> 7  
 tttttttttt tttttttttt tggctctaga gggggtagag ggggtgctat agggtaaata 60  
 cgggccctat ttcaaagatt tttaggggaa ttaattctag gacgatgggt atgaaactgt 120  
 gggttgctcc acagatttca gagcattgac cgtagtatac ccccggtcgt gtagcgggtga 180

aagtggtttg	gttttagacgt	ccgggaattg	catctgtttt	taagcctaata	gtggggacag	240
ctcatgagt	caagacgtct	tgtgatgtaa	ttattatacn	aatgggggct	tcaatcgga	300
gtactactcg	attgtcaacg	tcaaggagtc	gcaggtcgcc	tggttctagg	aataatggg	360
gaagtatgta	ggaattgaag	attaatccgc	cgtagtcggt	gttctcctag	gttcaatacc	420
attggtggcc	aattgatttg	atggtaagg	gagggatcgt	tgaactcgtc	tgttatgtaa	480
aggatncctt	ngggatggga	aggcnatnaa	ggactangga	tnaatggcgg	gcangattt	540
tcaaacngtc	tctanttcct	gaaacgtctg	aaatgttaat	aanaattaan	tttngttatt	600
gaatnttng	gaaaagggt	tacaggacta	gaaaccaa	angaaaanta	atnntaang	660
cnttatcntn	aaaggtgnata	accnctccta	tnatccacc	caatngnatt	ccccacnncn	720
acnattggat	ccccanttc	canaaanggc	cncccccgg	tgnannccnc	cttttgttcc	780
cttnantgan	ggttattcnc	ccctngcntt	atcance			817

&lt;210&gt; 8

&lt;211&gt; 799

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc feature

&lt;222&gt; (1)...(799)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 8

catttcggg	tttactttct	aaggaaagcc	gagcgggaagc	tgctaacgtg	ggaatcggtg	60
cataaggaga	actttctgct	ggcacgcgct	agggacaagc	gggagagcga	ctccgagcgt	120
ctgaagcgca	cgteccagaa	ggtggacttg	gcactgaaac	agctgggaca	catccgcgag	180
tacgaacagc	gcctgaaagt	gctggagcgg	gaggtccagc	agtgtagccg	cgctcctggg	240
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ggattttgct	cctanantaa	ggctcatctg	ggcctcggcc	ccccacactg	gttggccttg	420
tctttgangt	gagccccatg	tccatctggg	ccactgtcng	gaccaccttt	ngggagtgtt	480
ctccttacaa	ccacannatg	cccggctcct	cccggaaacc	antcccancc	tgngaaggat	540
caagnccctgn	atccactnnt	nctanaaccg	gccnccnccg	cngtggaaacc	cnccttntgt	600
tccttttcnt	tnagggttaa	tnnccgcttg	gccttnccan	ngtcctncnc	nttttccnt	660
gttnaaattg	ttangcnccc	nccnntcccn	cnnccnccan	cccgaaccnn	annttnnann	720
ncctgggggt	ncnncngat	tgaccenncc	nccctntant	tgcnttnggg	nncnntgccc	780
ctttccctct	nggganncg					799

&lt;210&gt; 9

&lt;211&gt; 801

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc feature

&lt;222&gt; (1)...(801)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 9

acgccttgat	cctcccaggc	tgggactggt	tctggggagga	gccgggcatg	ctgtggtttg	60
taangatgac	actcccaaag	gtggtcctga	cagtggccca	gatggacatg	gggtcacct	120
caaggacaag	gccaccagg	gcgggggccc	aagccacat	gatccttact	ctatgagcaa	180
aatcccctgt	gggggcttct	ccttgaagtc	cgccancagg	gctcagtctt	tggaccang	240
cagggtcatg	ggttgtngnc	caactggggg	ccncaacgca	aaanggcna	gggcctcngn	300
cacccatccc	angacggcgc	tacactnctg	gacctccncc	tccaccactt	tcatgcgctg	360
ttcntaccgc	cgnatntgtc	ccanctgttt	cngtgcncac	tccancttct	nggacgtgcg	420
ctacatacgc	ccggantcnc	netcccgtt	tgtccctatc	cacgtncan	caacaaattt	480
cncctnantg	caccnattcc	caenttttnc	agntttccnc	nncgngettc	cttntaaaag	540
ggttganccc	cggaaaatnc	cccaaagggg	ggggggccng	tacccaactn	ccccctnata	600
gctgaantcc	ccatnaccnn	gnctcnatgg	ancntccnt	tttaannacn	ttctnaactt	660
gggaananc	ctcgnccntn	ccccenttaa	tccncccttg	cnaagnnct	cccccnntcc	720
ncccnntng	gcntntnann	cnaaaaaggc	ccnnnancaa	tctcctnnen	cctcanttgc	780

ccanccctcg aaatcgccn c

801

<210> 10  
 <211> 789  
 <212> DNA  
 <213> Homo sapien  
  
 <220>  
 <221> misc\_feature  
 <222> (1)...(789)  
 <223> n = A,T,C or G

<400> 10  
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 acagtgtggc cgtgggtgaca gcttcagccg ccctcaccgg gttcaccttc tcagccctgc 120  
 agatcctgcc ctacacactg gcctccctct accaccggga gaagcaggtg ttcttgccca 180  
 aataccgagg ggacactgga ggtgctagca gtgaggacag cctgatgacc agcttcctgc 240  
 caggccctaa gcctggagct cccttcctta atggacacgt ggggtgctga ggcagtggcc 300  
 tgcctcccacc tccaccgcgc ctctgcgggg cctctgcctg tgatgtctcc gtacgtgtgg 360  
 tggtaggtga gccaccgan gccaggggtg ttccggggccg gggcatctgc ctggacctgc 420  
 ccacctgga tagtgcttcc tgctgtccca ngtggcccca tccctgttta tgggtccat 480  
 tgtccagctc agccagtctg tcaactgccta tatggtgtct gccgcaggcc tgggtctggt 540  
 cccatttact ttgctacaca ggtantattt gacaagaacg anttggccaa atactcagcg 600  
 ttaaaaaatt ccagcaacat tgggggtgga aggcctgcct cactgggtcc aactccccgc 660  
 tcctgttaac cccatggggc tgccggcttg gccgccaatt tctgttgctg ccaaantnat 720  
 gtgctctct gctgccacct gttgctggct gaagtgcnta cngcncanct nggggggtng 780  
 gnggttccc 789

<210> 11  
 <211> 772  
 <212> DNA  
 <213> Homo sapien  
  
 <220>  
 <221> misc\_feature  
 <222> (1)...(772)  
 <223> n = A,T,C or G

<400> 11  
 cccaccctac ccaaataatta gacaccaaca cagaaaagct agcaatggat tcccttctac 60  
 tttgttaaat aaataagtta aatattttaa tgcctgtgtc caacagaagg 120  
 accaacaggc cacatcctga taaaaggtaa gaggggggtg gatcagcaaa aagacagtgc 180  
 tgtgggctga ggggacctgg ttcttgtgtg ttgcccctca ggactcttcc cctacaaata 240  
 actttcatat gttcaaatac catggaggag tgtttcatcc tagaaactcc catgcaagag 300  
 ctacattaaa cgaagctgca ggttaagggg cttanagatg ggaaaccagg tgactgagtt 360  
 tattcagctc ccaaaaaccc ttctctaggt gtgtctcaac taggaggcta gctgttaacc 420  
 ctgagcctgg gtaatccacc tgcagagtcc ccgcattcca gtgcatggaa cccttctggc 480  
 ctccctgtat aagtccagac tgaaaccccc ttggaaggnc tccagtcagg cagccctana 540  
 aactggggaa aaaagaaaag gacgccccan ccccagctg tgcanctacg cacctcaaca 600  
 gcacagggtg gcagcaaaaa aaccacttta ctttggcaca aacaaaaact ngggggggca 660  
 accccggcac cccnangggg gttaacagga ancngggnaa cntggaaccc aattnaggca 720  
 ggcccnccac ccnaatntt gctgggaaat ttttctctcc ctaaatntt tc 772

<210> 12  
 <211> 751  
 <212> DNA  
 <213> Homo sapien  
  
 <220>  
 <221> misc\_feature  
 <222> (1)...(751)  
 <223> n = A,T,C or G

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<400> 12
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ttggctgtgt ttgtgacgtt gtcattgcaa cagaatgggg gaaaggcact gttctctttg      180
aagtanggtg agtcctcaaa atccgtatag ttggtgaagc cacagcactt gagccctttc      240
atggtgggtg tccacacttg agtgaagtct tcctgggaac cataatcttt ctatgatggca      300
ggcactacca gcaacgtcag ggaagtgtct agccattgtg gtgtacacca aggcgaccac      360
agcagctgcn acctcagcaa tgaagatgan gaggangatg aagaagaacg tcncgagggc      420
acacttgctc tcagtcttan caccatanca gcccntgaaa accaananca aagaccacna      480
cncgggctgc gatgaagaaa tnaccccneg ttgacaaact tgcattggcac tggganccac      540
agtggcccn aaaaatcttca aaaaggatgc cccatcnatt gaccccccaa atgcccactg      600
ccaacagggg ctgccccacn cncnnaacga tgancnatt gnacaagatc tncntgggtc      660
tnatnaacnt gaaccctgcn tngtggctcc tggtcaggnc cnnngcctga cttctnaann      720
aangaactcn gaagncccca cngganannc g                                     751

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<210> 13
<211> 729
<212> DNA
<213> Homo sapien

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<220>
<221> misc_feature
<222> (1)...(729)
<223> n = A,T,C or G

```

```

<400> 13
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tgtggancct cagcagtncc ctctttcaga actcantgcc aaganccctg aacaggagcc      120
accatgcagt gcttcagctt cattaagacc atgatgatcc tcttcaattt gctcatcttt      180
ctgtgtggtg cagccctgtt ggcagtgggc atctgggtgt caatcgatgg ggcacccctt      240
ctgaagatct tcgggccact gtcgtccagt gccatgcagt ttgtcaacgt gggctacttc      300
ctcatcgag ccggcggttg ggtcttagct ctagggttcc tgggctgcta tgggtgctaag      360
actgagagca agtgtgccct cgtgacgttc ttcttcaccc tcctcctcat ctctcattgt      420
gaggttgcaa tgctgtggtc gccttggtgt acaccacaat ggctgagcac ttctgacgt      480
tgctggtaat gcctgccatc aanaaaagat tatgggttcc cagggaanact tcaactcaagt      540
gttggaaacac caccatgaaa gggctcaagt gctgtggctt cncccaacta tacggatttt      600
gaagantcac ctacttcaaa gaaaanagtg cctttccccc atttctgttg caattgacaa      660
acgtccccaa cacagccaat tgaaaacctg caccacaacc aaangggctc ccaaccanaa      720
attnaaggg                                     729

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<210> 14
<211> 816
<212> DNA
<213> Homo sapien

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<220>
<221> misc_feature
<222> (1)...(816)
<223> n = A,T,C or G

```

```

<400> 14
tgctcttcct caaagttggt cttgttgcca taacaaccac cataggtaaa gcgggcgag      60
tgttcgctga aggggttgta gtaccagcgc gggatgctct ccttgagag tcctgtgtct      120
ggcaggtcca cgcagtcccc tttgtcactg gggaaatgga tgcgctggag ctctgcaaaag      180
ccactcgtgt atttttcaca ggcagcctcg tccgacgcgt cggggcagtt ggggggtgtc      240
tcacactcca ggaaactgtc natgcagcag ccattgctgc agcggaactg ggtgggctga      300
cangtgccag agcacactgg atggcgccct tccatgnnan gggccctgng ggaaagtccc      360
tganccccc anctgcctct caaangcccc accttgacac ccccgacagg ctagaatgga      420
atcttcttcc cgaaaggtag ttnttcttgt tgcccaancc ancccntaa acaaactctt      480
gcanatctgc tccngggggg tcntantacc ancgtgggaa aagaacccca ggcngcgaa      540
caancttggt tggatncgaa gcnataatct nctnttctgc ttggtggaca gcaccantna      600

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ctgtnnanct	ttagnccntg	gtcctcntgg	gttggncttg	aacctaatch	ccnntcaact	660
gggacaaggt	aantngccnt	cctttnaatt	cccnancntn	ccccctgggt	tgggggttttn	720
cncnctccta	ccccagaaan	nccgtgttcc	cccccaacta	ggggccnaaa	ccnnttnttc	780
cacaaccctn	ccccaccac	gggttcngnt	ggttng			816

&lt;210&gt; 15

&lt;211&gt; 783

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(783)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 15

ccaaggcctg	ggcaggcata	nacttgaagg	tacaacccca	ggaacccctg	gtgctgaagg	60
atgtggaaaa	cacagattgg	cgcctactgc	ggggtgacac	ggatgtcagg	gtagagagga	120
aagacccaaa	ccaggtggaa	ctgtggggac	tcaaggaang	cacctacctg	ttccagctga	180
cagtgactag	ctcagaccac	ccagaggaca	cggccaacgt	cacagtcact	gtgctgtcca	240
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gcttgggcaa	caagaacaac	taccttcggg	aagaagagtg	cattctancc	tgtcnggggtg	420
tgcaaggtgg	gcctttgana	ngcanctctg	gggctcangc	gactttcccc	caggggccctt	480
ccatggaaaag	gcgccatcca	ntgttctctg	gcacctgtca	gcccacccag	ttccgctgca	540
ncaatggctg	ctgcacnac	antttcctng	aattgtgaca	acacccccca	ntgcccccaa	600
ccctcccaac	aaagcttccc	tgtnaaaaaa	tacnccantt	ggcttttnac	aaacncccg	660
cncctcctnt	ttccccnntn	aacaaagggc	nctngccttt	gaactgcccn	aaccnnggaa	720
tctnccnngg	aaaaantncc	ccccctgggt	cctnnaance	cctccncnaa	anctncccc	780
ccc						816

&lt;210&gt; 16

&lt;211&gt; 801

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(801)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 16

gccccaatc	cagctgccac	accacccacg	gtgactgcat	tagttcggat	gtcatacaaa	60
agctgattga	agcaaccctc	tacttttttg	tcgtgagcct	tttgcttgg	gcagggtttca	120
ttggctgtgt	tggtgacgtt	gtcattgcaa	cagaatgggg	gaaaggcact	gttctctttg	180
aagtaggggtg	agtccctcaa	atccgtatag	ttgggtgaagc	cacagcactt	gagccctttc	240
atggtggtgt	tccacacttg	agtgaagtct	tcctgggaac	cataatcttt	cttgatggca	300
ggcactacca	gcaacgtcag	gaagtgtca	gccattgtgg	tgtacaccaa	ggcgaccaca	360
gcagctgcaa	cctcagcaat	gaagatgagg	aggaggatga	agaagaacgt	cncgagggca	420
cacttgctct	ccgtcttagc	accatagcag	cccangaaac	caagagcaaa	gaccacaacg	480
ccngctgcga	atgaaagaaa	ntaccacagt	tgacaaactg	catggccact	ggacgcacagt	540
tgggccgaan	atcttcagaa	aagggatgcc	ccatcgattg	aacacccana	tgccactgc	600
cnacagggct	gcnccncncn	gaaagaatga	gccattgaag	aaggatcnc	ntgggtcttaa	660
tgaactgaaa	ccntgcatgg	tgggccctgt	tcagggtctc	tggcagtgaa	ttctganaaa	720
aaggaacngc	ntnagcccc	ccaaangana	aaacaccccc	gggtgttgcc	ctgaattggc	780
ggccaaggan	ccctgccccn	g				801

&lt;210&gt; 17

&lt;211&gt; 740

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(740)  
 <223> n = A,T,C or G

<400> 17

gtgagagcca	ggcgtccctc	tgccctgccca	ctcagtggca	acacccggga	gctgttttgt	60
cctttgtgga	gcctcagcag	ttccctcttt	cagaactcac	tgccaagagc	cctgaacagg	120
agccaccatg	cagtgtctca	gcttcattaa	gaccatgatg	atcctcttca	atttgctcat	180
ctttctgtgt	ggtgcagccc	tgttggcagt	gggcatctgg	gtgtcaatcg	atggggcatc	240
ctttctgaag	atcttcgggc	cactgtcgtc	cagtgccatg	cagtttgtca	acgtgggcta	300
cttctctatc	gcagccggcg	ttgtggctct	tgctcttggg	ttcctgggct	gctatgggtc	360
taagacggag	agcaagtgtg	ccctcgtgac	gttcttcttc	atcctcctcc	tcattctcat	420
tgctgaagtt	gcagctgctg	tggtcgcctt	ggtgtacacc	acaatggctg	aaccattcct	480
gacgttgctg	gtantgcctg	ccatcaanaa	agattatggg	ttcccaggaa	aaattcactc	540
aantntggaa	caccnccatg	aaaagggctc	caatttctgn	tggttcccc	aactataccg	600
gaattttgaa	agantcnccc	tacttccaaa	aaaaaanant	tgcttttnc	ccnttctgt	660
tgcaatgaaa	acntcccaan	acngccaatn	aaaacctgcc	cnnncaaaaa	ggntcncaaa	720
caaaaaaant	nnaagggttn					740

<210> 18  
 <211> 802  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(802)  
 <223> n = A,T,C or G

<400> 18

ccgctgggtg	cgctgggtcca	gngnagccac	gaagcacgtc	agcatacaca	gcctcaatca	60
caaggtcttc	cagctgccgc	acattacgca	gggcaagagc	ctccagcaac	actgcatatg	120
ggatacactt	tacttttagca	gccagggtga	caactgagag	gtgtcgaagc	ttattcttct	180
gagcctctgt	tagtggagga	agattccggg	cttcagctaa	gtagtcagcg	tatgtcccat	240
aagcaaacac	tgtgagcagc	cgggaaggtg	aggcaaagtc	actctcagcc	agctctctaa	300
cattgggcag	gtccagcagt	tctccaaaca	cgtagacacc	agnggcctcc	agcacctgat	360
ggatgagtgt	ggccagcgct	gccccttgg	ccgacttggc	taggagcaga	aattgctcct	420
ggttctgccc	tgtaaccttc	acttccgcac	tcatactgct	actgagtgtg	ggggacttgg	480
gctcaggatg	tccagagacg	tggttccgcc	ccctcnctta	atgacaccgn	ccanncaacc	540
gtcggctccc	gccgantgng	ttcgtcgtnc	ctgggtcagg	gtctgctggc	cncacttgc	600
aancttcgtc	nggcccatgg	aattcaccnc	accggaactn	gtangatcca	ctnnttctat	660
aaccggnccg	caccgcnnnt	ggaactccac	tcttnttnc	tttacttgag	ggttaaggtc	720
acccttnncc	ttaccttggg	ccaaacctn	cctgtgtcgc	anatngtnaa	tcnggnccna	780
tnccancnc	atangaagcc	ng				802

<210> 19  
 <211> 731  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(731)  
 <223> n = A,T,C or G

<400> 19

cnaagcttcc	aggtnacggg	ccgcnaancc	tgacccnagg	tancanaang	cagnncngcgg	60
gagcccaccg	tcacngngng	gngtctttat	nggagggggc	ggagccacat	cnetggacnt	120
cntgacccca	actcccnc	ncncantgca	gtgatgagt	cagaactgaa	ggtnacgtgg	180
caggaaccaa	gancaaannc	tgctccnntc	caagtccgcn	nagggggcgg	ggctggccac	240
gncatccnt	cnagtgtcgn	aaagccccnn	cctgtctact	tgtttggaga	acngcnnnga	300

catgcccagn	ggtanataac	nggcngagag	tnantttgcc	tctcccttcc	ggctgcgcan	360
cgngtntgct	tagnggacat	aacctgacta	cttaactgaa	cccngaatac	tnccncccc	420
ccactaagct	cagaacaaaa	aacttegaca	ccactcantt	gtcacctgnc	tgctcaagta	480
aagtgtaccc	catncccaat	gtntgctnga	ngctctgncc	tgcnttangt	tcggtcctgg	540
gaagacctat	caattnaagc	tatgtttctg	actgcctctt	gtccctgna	acaancnacc	600
cnnnntcca	aggggggggnc	ggcccccaat	ccccccaacc	ntnaattnan	tttancccn	660
ccccnggcc	cggcctttta	cnancntcnn	nnaengggna	aaaccnnngc	tttncccaac	720
nnaatccncc	t					731

&lt;210&gt; 20

&lt;211&gt; 754

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(754)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 20

tttttttttt	tttttttttt	taaaaacccc	ctccattnaa	tgnaaacctc	cgaaattgtc	60
caacccctc	ntccaaatnn	ccntttccgg	gnggggggtc	caaacccean	ttanntttgg	120
annttaaatt	aaatnttntt	tgngngnnna	anccnaatgt	nangaaagtt	naaccanta	180
tnancttnaa	tnccctggaaa	ccngtngntt	ccaaaaatnt	ttaaccctta	antccctccg	240
aaatngttna	nggaaaacccc	aantttctct	aaggttggtt	gaaggntnaa	tnaaaaancc	300
nnccaattgt	ttttngccac	gcctgaatta	attgnttcc	gntgttttcc	nttaaaanaa	360
ggnnancccc	ggttantnaa	tccccccnnc	cccaattata	ccganttttt	ttngaattgg	420
gancccnccg	gaattaacgg	ggnnnnntccc	tnntgggggg	cnggnncccc	ccccntccgg	480
ggttngggnc	aggnccnaat	tgtttaaggg	tccgaaaaat	ccctccnaga	aaaaaanctc	540
ccagngtgag	nnnggggttt	ncccccccc	canggccctt	ctcgananagt	tgggggttgg	600
ggggcctggg	attttntttc	ccctnttncc	tcccccccc	ccnggganag	aggttngngt	660
tttgntcnnc	ggccccnccn	aaganctttt	ccganttnan	ttaaatccnt	gcctnggcga	720
agtcnttgn	agggntaaan	ggccccctnn	cggg			754

&lt;210&gt; 21

&lt;211&gt; 755

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(755)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 21

atcancccat	gaccccnac	nnngggaccnc	tcancgggnc	nnncnaccnc	cggccnatca	60
nngtnagnnc	actncnnttn	natcacnccc	cncnactac	gccncnanc	cnacgcncta	120
nncanatancc	actganngcg	cgangtngan	ngagaaanct	nataccanag	ncaccanacn	180
ccagctgtcc	nanaangcct	nnnatacnng	nnnatccaat	ntgnancctc	cnaagtattn	240
nncnncanat	gattttccctn	anccgattac	ccntncccc	tanccctcc	cccccaacna	300
cgaaggcnct	ggncnnaagg	nngcgnncnc	ccgctagntc	cccncaagt	cnncncccta	360
aactcanccn	nattacnccg	ttcntgagta	tcactccccg	aatctcacc	tactcaactc	420
aaaaanattcn	gatacaaaa	aatncaagcc	tgnttatnac	actntgactg	ggtctctatt	480
ttagnggtcc	ntnaancntc	ctaatacttc	cagctcncct	tcnccaattt	ccnaanggct	540
ctttcngaca	gcatnttttg	gttcccnntt	gggttcttan	ngaattgcc	ttcntngaac	600
gggctcntct	tttccttcgg	ttancctgg	ttcnccggc	cagttattat	ttcccntttt	660
aaattcntnc	cntttanttt	tggcnttcna	aacccccggc	cttgaaaacg	gccccctggt	720
aaaaggttgt	tttganaaaa	tttttgtttt	gttcc			755

&lt;210&gt; 22

&lt;211&gt; 849

&lt;212&gt; DNA

<213> Homo sapien

<220>

<221> misc\_feature

<222> (1)...(849)

<223> n = A,T,C or G

<400> 22

tttttttttt	tttttangtg	tngtcgtgca	ggtagaggct	tactacaant	gtgaanacgt	60
acgctnggan	taangcgacc	cgantttctag	gannncnccct	aaaatcanac	tgtgaagatn	120
atcctgnnna	cggaanggtc	accggnngat	nntgctaggg	tgneenctcc	cannncnttn	180
cataactcng	nggcccctgcc	caccaccttc	ggcggcccnng	ngnccggggcc	cgggtcattn	240
gnnttaaccn	cactnngcna	ncggtttccn	nccccnncng	accnnggcga	tccgggggtnc	300
tctgtcttcc	cctgnagncn	anaaantggg	ccnccgnccc	ctttaccctt	nnacaagcca	360
cngccntcta	neenengccc	cccctccant	nngggggact	gccnanngtc	ccgttntctng	420
nnaccccnnn	gggtncctcg	gttgtcgant	cnaccgnang	ccanggatcc	cnaaggaagg	480
tgcgttnttg	gccccctaccc	ttcgctncgg	nnccaccttc	ccgacnanga	nccgctccccg	540
cnenncgng	cctcnccctcg	caacacccgc	nctcntcngt	ncggnnnccc	ccccacccgc	600
nccctcncnc	ngnccgnancn	ctccnccncc	gtctcannca	ccaccccgcc	ccgccaggcc	660
ntcanccacn	ggnggacnng	nagcncnttc	gcncgcgcgn	gcgnncnccct	cgcncngaa	720
ctnctcngg	ccantnncgc	tcaanccnna	cnaaacgcgc	ctgcgcggcc	cgnagcgncc	780
ncctccncca	gtccctcccg	cttccnacc	angnttccn	cgaggacacn	nnaccccgcc	840
nncangcgg						849

<210> 23

<211> 872

<212> DNA

<213> Homo sapien

<220>

<221> misc\_feature

<222> (1)...(872)

<223> n = A,T,C or G

<400> 23

gcgcaaacta	tacttcgctc	gnactcgtgc	gcctcgtctnc	tcttttctctc	cgcaaccatg	60
tctgacnanc	ccgattnggc	ngatatchan	aagntcganc	agtccaaact	gantaacaca	120
cacacnncan	aganaaatcc	nctgccttcc	anagtanacn	attgaacnng	agaaccangc	180
nggcgaatcg	taatnaggcg	tgcgcgcgcca	atntgtcncc	gtttattntn	ccagctcnc	240
ctnccncccc	tactctctcn	nagctgtcnn	acccctngtn	cgnaccccc	naggtcggga	300
tcgggttttn	nntgaccgng	cnnccccctc	ccccntccat	nacganccnc	ccgcaccacc	360
nanngcncgc	nccccgnnet	cttcgcncnc	ctgtcctntn	cccctgtngc	ctggcncngn	420
accgcattga	ccctcgcenn	ctncnngaaa	ncgnanacgt	ccgggttggn	annancgctg	480
tgggnnnngcg	tctgcncgcg	gttccttccn	nenncttcca	ccatcttctn	tacnggggtct	540
ccnccgcntc	tcnnncacnc	cctggggaacg	tnctcctntgc	cccccttnac	tccccctctt	600
cgncgtgncc	cgncccccacc	ntcatttnca	nacgntcttc	acaannncct	ggntnnctcc	660
cnancngncn	gtcanccnag	ggaaggngng	ggnnccnntg	nttgacgttg	ngnggangtc	720
cgaanantcc	tcnccntcan	cncctacccct	cgggcgnnet	ctcngttnc	aacttancaa	780
ntctcccccg	ngngcncntc	tcagcctcnc	ccnccccnct	ctctgcantg	tnctctgctc	840
tnaccnntac	gantnttcgn	cncctctctt	cc			872

<210> 24

<211> 815

<212> DNA

<213> Homo sapien

<220>

<221> misc\_feature

<222> (1)...(815)

<223> n = A,T,C or G

<400> 24

gcatgcaagc	ttgagtattc	tatagngtca	cctaaatanc	ttggcntaat	catgggtcnta	60
ncatgnccttc	tgtgtcaaat	gtatacnaa	tanatatgaa	tctnatntga	caagannngta	120
tctnncatta	gtaacaantg	tnntgtccat	cctgtcngan	canattccca	tnnattncgn	180
cgcattcnnc	gcncantatn	taatngggaa	ntcnntnnn	ncaccnncat	ctatcntncc	240
gcnccttgac	tggagagat	ggatnanttc	tnntntgacc	nacatgttca	tcttggattn	300
aananccccc	cgcngnccac	cggttngnng	cnagecnnct	ccaagacctc	ctgtggaggt	360
aacctgcgtc	aganncatca	aacntgggaa	acccgcnncc	angtnnaagt	ngnnncanan	420
gatcccgctc	aggnttnacc	atcccttcnc	agcgccccc	ttngtgcctt	anagnnagc	480
gtgtccnanc	cnctcaacat	ganacgcgcc	agnccanccg	caattnggca	caatgtcgnc	540
gaaccccccta	gggggantna	tncaaanccc	caggattgtc	cncncangaa	atccncanc	600
cccnccttac	ccncttttg	gacngtgacc	aantcccgga	gtncaggtcc	ggcngnctc	660
ccccaccggt	nnccntgggg	gggtgaanct	cngnntcanc	cngncgaggn	ntcgnaagga	720
accggnccctn	ggncgaanng	ancnntcnga	agnccnctn	cgtataacce	cccctcncca	780
nccnacngnt	agntcccccc	cngggtncgg	aangg			815

<210> 25  
 <211> 775  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(775)  
 <223> n = A,T,C or G

<400> 25						
ccgagatgtc	tcgtctcgtg	gccttagctg	tgtctcgcgt	actctctctt	tctggcctgg	60
aggctatcca	gcgtactcca	aagattcagg	tttactcacg	tcatccagca	gagaatggaa	120
agtcaaattt	cctgaattgc	tatgtgtctg	ggtttcatcc	atccgacatt	gaanttact	180
tactgaagaa	tgganagaga	attgaaaaag	tggagcattc	agacttgtct	ttcagcaagg	240
actggtcttt	ctatctcntg	tactacactg	aattcacccc	cactgaaaaa	gatgagtatg	300
cctgccgtgt	gaaccatgtg	actttgtcac	agcccaagat	agttaagtgg	gatcgagaca	360
tgtaaagcagn	cnncatggaa	gtttgaagat	gccgcatttg	gattggatga	attccaaatt	420
ctgcttgctt	gcnttttaat	antgatatgc	ntatacaccc	taccctttat	gnccccaaat	480
tgtaggggtt	acatnantgt	tcnctntngga	catgatcttc	ctttataant	ccnccnttcg	540
aattgcccgt	cncccnngtn	ngaattgttc	cnnaaccacg	gttggtctcc	ccaggtcncc	600
tcttacggaa	gggcctgggc	cnctttncaa	ggttggggga	accnaaaatt	tcnctnttgc	660
ccncccncca	cnntcttgng	nnccnctttt	ggaacccttc	cnattcccc	tggcctcnna	720
nccttnncta	anaaaacttn	aaancgtngc	naaanntttt	acttcccccc	ttacc	775

<210> 26  
 <211> 820  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(820)  
 <223> n = A,T,C or G

<400> 26						
anattantac	agtgtaatct	tttcccagag	gtgtgtanag	ggaacggggc	ctagaggcat	60
cccanagata	nccttatanca	acagtgcctt	gaccaagagc	tgctgggcac	atttcctgca	120
gaaaagggtg	cggcccccat	cactcctcct	ctcccatagc	catcccagag	gggtgagtag	180
ccatcangcc	ttcgggtggga	gggagtcang	gaaacaacan	accacagagc	anacagacca	240
ntgatgacca	tgggctggag	cgagcctctt	ccctgnaccg	gggtggcana	nganagccta	300
nctgaggggt	cacactataa	acgttaacga	ccnagatnan	cacctgcttc	aagtgcaccc	360
ttcctacctg	acnaccagn	accnnnaact	gncgcctggg	gacagcnctg	ggancagcta	420
acnnagcact	cacctgcccc	cccatggccg	tnccnctccc	tggtcctgnc	aagggaagct	480
ccctgttgga	attncgggga	naccaaggga	nccccctcct	ccanctgtga	aggaaaaann	540
gatggaattt	tncccttcgg	gccnntcccc	tcttccttta	cacgccccct	nnctactctc	600
tccctctntt	ntcctgncnc	acttttnacc	ccnnnatttc	ccttnattga	tcggannctn	660

ganattccac tnnccctnc cntcnatcng naanacnaaa nactntctna cccnggggat 720  
 gggnnccctcg ntcatectct ctttttctct accncenntt ctttgcctct ccttngatca  
 780tccaacntc gntggcctn ccccccnntt tcttttccc  
 820

<210> 27  
 <211> 818  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(818)  
 <223> n = A,T,C or G

<400> 27  
 tctgggtgat ggcctcttcc tctcagggga cctctgactg ctctgggcca aagaatctct 60  
 tgtttcttct ccgagcccca ggcagcgggtg attcagccct gcccaacctg attctgatga 120  
 ctgcggatgc tgtgacggac ccaaggggca aataggggtcc cagggtccag ggaggggccc 180  
 ctgctgagca cttccgcccc tcacctgcc cagccctgc catgagctct gggctgggtc 240  
 tccgcctcca gggttctget ctccangca ngccancaag tggcgctggg ccacactggc 300  
 ttcttctgc cccntccctg gctctganc tctgtcttcc tgtcctgtgc angcnccttg 360  
 gatctcagtt tccctcctc anngaactct gtttctgann tcttcantta actntgantt 420  
 tatnaccnan tggnetgtnc tgtcnnactt taatgggccc gaccggctaa tccctccctc 480  
 nctcccttcc anttcnnna accngcttnc cntctctcc ccntancccg ccngggaanc 540  
 ctcccttgcc ctnaccangg gccnnnaccg cccntnnctn gggggggcng gttnctncnc 600  
 ctgntncccc cnetcncnt tncctcgcc cncnncgc nngcannttc nengtcccn 660  
 tnnctcttcn ngntcgnaa ngntcncntn tnnnnngnc ngntnntncn tccctctcnc 720  
 cnnntgnang tnnntnnnc ncngncccc nnnnnnnnn nggnntnnn tctncncngc 780  
 cccnncccc ngntaagg cctcnnctc ccggccnc 818

<210> 28  
 <211> 731  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(731)  
 <223> n = A,T,C or G

<400> 28  
 aggaagggcg gagggatatt gtangggatt gagggatagg agnataangg gggaggtgtg 60  
 tcccaacatg anggtgnngt tctcttttga angaggggtg ngtttttann ccnggtgggt 120  
 gattnaacc cattgtatgg agnnaaagg tttnaggat ttttcggctc ttatcagtat 180  
 ntanattcct gtnaatcgga aaatnatntt tcnnccggaa aatnttgctc ccatccgnaa 240  
 attnctcccc ggtagtgcatt nttngggggg cngccangtt tcccaggctg ctanaatcgt 300  
 actaaagntt naagtggan tncaaatgaa aacctnnac agagnatccn tacccgactg 360  
 tnnnttncct tcgccctng actctgcng agcccaatac ccnngngnat gtcncccn 420  
 nnnccgncnc tgaaannnnc tcngggctnn gancatcang ggggttccgca tcaaaagcnn 480  
 cgtttcncat naaggcactt tngcctcacc caaccnctng cctcnncca tttngccgtc 540  
 nggttncct acgctnntng cncctnnntn ganattttnc ccgcctnggg naancctcct 600  
 gnaatgggta gggncctntc ttttnaccnn gnggtntact aatcnnctnc acgcntnctt 660  
 tctnaccccc ccccttttt caatccanc ggcnaatggg gtctccccnn cgangggggg 720  
 nnnccannc c 731

<210> 29  
 <211> 822  
 <212> DNA  
 <213> Homo sapien

<220>

<221> misc\_feature  
 <222> (1)...(822)  
 <223> n = A,T,C or G

<400> 29

actagtccag	tgtggtggaa	ttccattgtg	ttggggncnc	ttctatgant	antnttagat	60
cgctcanacc	tcacancctc	ccnacnangc	ctataangaa	nannaataga	nctgtncnnt	120
atntntacnc	tcatanncct	cnnnaccac	tccctcttaa	cccctactgt	gcctatngcn	180
tnnctantct	ntgccgcctn	cnanccaccn	gtgggccnac	cncnngnatt	ctcnatctcc	240
tcnccatntn	gcctananta	ngtncatacc	ctatacctac	nccaatgcta	nnnctaancn	300
tccatnantt	annntaacta	ccactgaant	ngactttcnc	atnanctcct	aatttgaatc	360
tactctgact	cccacngcct	annnattagc	ancntccccc	nacnatntct	caaccaaadc	420
ntcaacaacc	tatctantct	ttcnccaacc	nttnccctccg	atccccnnac	aacccccctc	480
ccaaataccc	nccacctgac	ncctaaccn	caccatcccg	gcaagccnan	ggncatttan	540
ccactggaat	cacnatngga	naaaaaaac	ccnaactctc	tancncnnat	ctccctaana	600
aatnctcctn	naatttactn	ncantnccat	caanccccacn	tgaacnnaa	cccctgtttt	660
tanatccctt	ctttcgaaaa	ccnacccttt	annncccaac	ctttngggcc	ccccnctnc	720
ccnaatgaag	gncnccaat	cnangaaacg	nccntgaaaa	ancnaggcna	anannntccg	780
canatcctat	cccttanttn	ggggncctt	ncccnngggcc	cc		822

<210> 30  
 <211> 787  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(787)  
 <223> n = A,T,C or G

<400> 30

cggccgcctg	ctctggcaca	tgcctcctga	atggcatcaa	aagtgatgga	ctgcccattg	60
ctagagaaga	ccttctctcc	tactgtcatt	atggagccct	gcagactgag	ggctcccctt	120
gtctgcagga	tttgatgtct	gaagtcgtgg	agtgtggctt	ggagctcctc	atctacatna	180
gctggaagcc	ctggagggcc	tctctcgcca	gcctccccct	tctctccacg	ctctccangg	240
acaccagggg	ctccaggcag	cccattattc	ccagnangac	atggtgtttc	tccacgcgga	300
cccatggggc	ctgnaaggcc	agggtctcct	ttgacaccat	ctctcccgtc	ctgcctggca	360
ggccgtggga	tccactantt	ctanaacggg	cgccaccncg	gtgggagctc	cagcttttgt	420
tcccnttaat	gaaggttaat	tgcncgcttg	gogtaatcat	nggtcanaac	tnnttctctg	480
gtgaaattgt	ttntccccct	ncnatccnc	ncnacatacn	aacccgggan	cataaagtgt	540
taaagccttg	gggtngcctn	nngaataaac	tnaactcaat	taattgcgtt	ggctcatggc	600
ccgctttccn	ttcnggaaaa	ctgtcntccc	ctgcnttnnt	gaatcggcc	cccccnngg	660
aaaagcgggt	tgcnttttng	gggntcctt	ccnctcccc	cctcnctaan	ccctncgctt	720
cggtcgttnc	nggtngcggg	gaangggnat	nnnctccnc	naagggggng	agnnnngntat	780
ccccaaa						787

<210> 31  
 <211> 799  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(799)  
 <223> n = A,T,C or G

<400> 31

tttttttttt	tttttttggc	gatgctactg	tttaattgca	ggaggtgggg	gtgtgtgtac	60
catgtaccag	ggctattaga	agcaagaagg	aaggaggagg	ggcagagcgc	cctgctgagc	120
aacaaaggac	tcctgcagcc	ttctctgtct	gtctcttggc	gcaggcacat	ggggaggcct	180
cccgcagggt	gggggccacc	agtccagggg	tgggagcact	acanggggtg	ggagtgggtg	240
gtggctggtg	cnaatggcct	gncacanatc	cctacgattc	ttgacacctg	gatttcacca	300

ggggaccttc	tggttctcca	nggnaacttc	ntnnatctcn	aaagaacaca	actgtttctt	360
cngcanttct	ggctgttcat	ggaaagcaca	gggtgtccnat	ttnggctggg	acttggtaca	420
tatggttccg	gcccacctct	cccntcnaaa	aagtaattca	ccccccccc	ccntctnttg	480
cctggggcct	taantaccca	caccggaact	canttantta	ttcatcttng	gntgggcttg	540
ntnatcnccn	cctgaangcg	ccaagttgaa	aggccacgcc	gtncnccnctc	cccatagnan	600
nttttntnt	canctaatac	ccccccnggc	aacnatccaa	ttcccccccn	tggggggcccc	660
agcccanngc	ccccgncctc	ggnnnccnng	cncgnantcc	ccaggnctctc	ccantcngnc	720
ccnnngcncc	cccgacacga	gaacanaagg	ntngagccnc	cgcannnnnn	nggtnnncac	780
ctcgcccccc	ccnnccgngg					799

<210> 32  
 <211> 789  
 <212> DNA  
 <213> Homo sapien  
  
 <220>  
 <221> misc\_feature  
 <222> (1)...(789)  
 <223> n = A,T,C or G

<400> 32						
tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	60
tttttncnag	ggcagggtta	ttgacaacct	cncgggacac	aancaggctg	gggacaggac	120
ggcaacaggc	tccggcgggc	gcggcgggcg	ccctacctgc	ggtaccaaat	ntgcagcctc	180
cgctcccgtc	tgatnttctc	ctgcagctgc	aggatgccnt	aaaacagggc	ctcgggccntn	240
ggtgggcacc	ctgggatttn	aatttccacg	ggcacaatgc	ggtcgcancc	cctcaccacc	300
nattaggaat	agtggnttta	ccnccnccg	ttggcncaact	ccccntggaa	accacttntc	360
gcggtccggc	catctggtct	taaaccttgc	aaacnctggg	gccctctttt	tggttantnt	420
nccngccaca	atcatnactc	agactggcnc	gggctggccc	caaaaaancc	ccccaaaacc	480
ggncatgtc	ttncgggggt	tgctgcnatn	tncatcacct	cccgggcncn	ncaggncaac	540
ccaaaagtgc	ttgngggccn	caaaaaanct	ccgggggggnc	ccagtttcaa	caaagtcac	600
ccccttggcc	cccaaatect	ccccccgntt	nctgggtttg	ggaacccacg	cctctnnctt	660
tggnnggcaa	gntggntccc	ccttcggggc	cccgggtggc	ccnctcttaa	ngaaaacncc	720
ntcctnnnca	ccatcccccc	nngnnacgnc	tancaangna	tccctttttt	tanaaacggg	780
ccccccnccg						799

<210> 33  
 <211> 793  
 <212> DNA  
 <213> Homo sapien  
  
 <220>  
 <221> misc\_feature  
 <222> (1)...(793)  
 <223> n = A,T,C or G

<400> 33						
gacagaacat	gttggtggt	ggagcacctt	tctatacgac	ttacaggaca	gcagatgggg	60
aattcatggc	tggtggagca	atanaacccc	agttctacga	gctgctgatc	aaaggacttg	120
gactaaagtc	tgatgaactt	cccaatcaga	tgagcatgga	tgattggcca	gaaatgaana	180
agaagtttgc	agatgtattt	gcaaagaaga	cgaaggcaga	gtggtgtcaa	atctttgacg	240
gcacagatgc	ctgtgtgact	ccggttctga	cttttgagga	ggttggtcat	catgatcaca	300
acaangaacg	gggctcgttt	atcaccantg	aggagcagga	cgtgagcccc	cgccctgcac	360
ctctgctgtt	aaacacccca	gccatccctt	ctttcaaaaag	ggatccacta	cttctagagc	420
ggncgccacc	gcggtggagc	tccagctttt	gttcccttta	gtgagggtta	attgcgcgct	480
tggcgtaatc	atggtcatan	ctgtttcctg	tgtgaaattg	ttatccgctc	acaattccac	540
acaacatacg	anccggaagc	atnaaatttt	aaagcctggg	ggtngcctaa	tgantgaact	600
nactcacatt	aattggcttt	gcgctcactg	cccgttttcc	agtcgggaaa	acctgtcctt	660
gccagctgcc	nttaatgaat	cnggccaccc	cccggggaaa	aggcngtttg	cttnttgggg	720
cgcncctccc	gctttctcgc	ttcctgaant	ccttcccccc	ggtctttcgg	cttgccggcna	780
acggtatcna	cct					793



<210> 34  
 <211> 756  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(756)  
 <223> n = A,T,C or G

<400> 34

gccgcgaccg	gcatgtacga	gcaactcaag	ggcgagtggga	accgtaaaag	ccccaatctt	60
ancaagtgcg	gggaanagct	gggtcgactc	aagctagttc	ttctggagct	caacttcttg	120
ccaaccacag	ggaccaagct	gaccaaacag	cagctaattc	tggcccgtga	catactggag	180
atcgggggccc	aatggagcat	cctacgcaan	gacatcccct	ccttcgagcg	ctacatggcc	240
cagctcaaat	gctactactt	tgattacaan	gagcagctcc	ccgagtcagc	ctatatgcac	300
cagctcttgg	gcctcaacct	cctcttcctg	ctgtcccaga	accgggtggc	tgantnccac	360
acgganttgg	ancggctgcc	tgcccaanga	catacanacc	aatgtctaca	tcnaccacca	420
gtgtccttga	gcaatactga	tggangggcag	ctaccncaaa	gtnttcctgg	ccnagggtaa	480
catccccgcg	cgagagctac	accttcttca	ttgacatcct	gctcgacact	atcaggggatg	540
aaaatcgcn	ggttgctcca	gaaaggctnc	aanaanatcc	ttttcnctga	aggcccccg	600
atnncntagt	nctagaatcg	gcccgccatc	gcggtgganc	ctccaacctt	tcgttnccct	660
ttactgaggg	tnnattgccg	cccttggcgt	tatcatggtc	acnccngttn	cctgtgttga	720
aattnttaac	ccccacaaat	tccacgcena	cattn			756

<210> 35  
 <211> 834  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(834)  
 <223> n = A,T,C or G

<400> 35

ggggatctct	anactnacct	gnatgcatgg	ttgtcgggtg	ggtcgctgtc	gatgaanatg	60
aacaggatct	tgcccttgaa	gctctcggtc	gctgtnttta	agttgctcag	tctgccgtca	120
tagtcagaca	cnctcttggg	caaaaaacan	caggatntga	gtcttgattt	cacctccaat	180
aatcttcngg	gctgtctgct	cggtgaactc	gatgacnang	ggcagctggg	tgtgtntgat	240
aaantccanc	angttctcct	tggtgacctc	cccttcaaag	ttgttcgggc	cttcatcaaa	300
cttctnnaan	angannancc	canttttgtc	gagctggnat	ttgganaaca	cgctactggt	360
ggaaactgat	cccaaattgg	atgtcatcca	tcgcctctgc	tgccctgcaa	aaacttgctt	420
ggcncaaate	cgactcccn	tccttgaaag	aagccnatca	cacccccctc	cctggactcc	480
nncaangact	ctnccgctnc	ccntccnng	cagggttggg	ggcannccgg	gcccntgcgc	540
ttcttcagcc	agttcacnat	nttcatcagc	ccctctgcca	gctgtnttat	tccttggggg	600
ggaanccgtc	tctcccttcc	tgaannaact	ttgaccgtng	gaatagccgc	gcntcnccnt	660
acntnctggg	ccgggttcaa	antccctccn	ttgncnntcn	cctcgggcca	ttctggattt	720
nccnaacttt	ttccttcccc	cnccccncgg	ngtttgntt	tttcatnggg	ccccaaactc	780
gctnttgccc	antcccttgg	gggcntntan	cnccccctnt	ggc		834

<210> 36  
 <211> 814  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(814)  
 <223> n = A,T,C or G

<400> 36

cggnccgcttt	ccngccgcgc	cccgtttcca	tgacnaaggc	tcccttcang	ttaaatacnn	60
cctagnaaac	attaatgggt	tgctctacta	atacatcata	cnaaccagta	agcctgcccc	120
naacgccaac	tcaggccatt	cctaccaaag	gaagaaaaggc	tggtctctcc	acccccgtga	180
ggaaaaggcct	gccttgtaag	acaccacaat	ncggctgaat	ctnaagtctt	gtgttttact	240
aatggaaaaa	aaaaataaac	aanaggtttt	gttctcatgg	ctgcccaccg	cagcctggca	300
ctaaaacanc	ccagcgctca	cttctgcttg	ganaaaatatt	ctttgctctt	ttggacatca	360
ggcttgatgg	tatcactgcc	acntttccac	ccagctgggc	ncccttcccc	catntttgtc	420
antganctgg	aaggcctgaa	ncttagtctc	caaaagtctc	ngcccacaag	accggccacc	480
agggggangtc	ntttncagtg	gatctgccaa	anantaccen	tatcatcnnt	gaataaaaaag	540
gcccctgaac	ganatgcttc	cancancctt	taagacccat	aatcctngaa	ccatgggtgcc	600
cttcgggtct	gatacnaaa	gaatgttctt	gggtcccant	ccctcctttg	ttnccttacgt	660
tgtnntggac	ccntgctngn	atnaccnaan	tganatcccc	ngaagcacc	tnccctggc	720
atgtganttt	cntaaattct	ctgccctacn	nctgaaagca	cnattccctn	ggcncnnaan	780
ggngaactca	agaaggtctn	ngaaaaacca	cncn			814

<210> 37  
 <211> 760  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(760)  
 <223> n = A,T,C or G

<400> 37						
gcatgctgct	cttccctcaaa	gttggttcttg	ttgccataac	aaccaccata	ggtaaagcgg	60
gcgcagtggt	cgctgaagg	gttgtagtac	cagcgcgagg	tgctctcctt	gcagagtcct	120
gtgtctggca	ggtccacgca	atgccctttg	tactggggga	aatggatgcg	ctggagctcg	180
tcnaanccac	tcgtgtat	ttcacangca	gcctcctccg	aagcctccgg	gcagttgggg	240
gtgtcgctcac	actccactaa	actgtcgatn	cancagccca	ttgctgcagc	ggaactgggt	300
gggctgacag	gtgccagaac	acactggatn	ggcctttcca	tggaagggcc	tgggggaaat	360
cncctnancc	caaaactgcct	ctcaaaggcc	accttgacac	ccccgacagg	ctagaaatgc	420
actcttcttc	ccaaaggtag	ttgttcttgg	tgcccaagca	ncctccanca	aacccaaaanc	480
ttgcaaaatc	tgctccgtgg	gggtcatnnn	taccanggtt	ggggaaanaa	acccggcngn	540
ganccncctt	gtttgaatgc	naaggnaata	atcctcctgt	cttgcttggg	tggaanagca	600
caattgaaat	gttaacnttg	ggccnggttc	cncnnggttg	gtctgaaact	aatcacctgc	660
actggaaaaa	ggtangtgcc	ttccttgaat	tcccaaantt	cccctngntt	tggtgnnttt	720
ctcctctncc	ctaaaaatcg	tnttcccccc	centanggcg			760

<210> 38  
 <211> 724  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(724)  
 <223> n = A,T,C or G

<400> 38						
tttttttttt	tttttttttt	tttttttttt	tttttaaaaa	ccccctccat	tgaatgaaaa	60
cttccnaaat	tgccaacccc	cctcncccaa	atnnccattt	ccgggggggg	gttccaaacc	120
caaattaatt	ttgganttta	aattaaatnt	tnattngggg	aanaanccaa	atgtnaagaa	180
aatttaaccc	attatnaact	taaatnccctn	gaaaccctng	gnttccaaaa	atttttaacc	240
cttaaatccc	tccgaaattg	ntaanggaaa	accaaattcn	cctaaggctn	tttgaagggt	300
ngattttaaac	ccccttnant	tnttttnacc	cnngnctnaa	ntatttngnt	tccgggtgtt	360
tcctnttaan	cntnggtaac	tcccngtaat	gaannnccct	aanccaatta	aaccgaattt	420
tttttgaaat	ggaaattccn	ngggaattna	ccgggggttt	tcccnttttg	gggccatncc	480
cccnctttcg	gggtttgggn	ntaggttgaa	tttttnnang	ncccaaaaaa	ncccccaana	540
aaaaaactcc	caagnnttaa	ttngaattnc	ccccttccca	ggccttttgg	gaaaggnggg	600
ttnttggggg	ccngggantt	cnttcccccn	ttncncccc	ccccccnggt	aaanggttat	660

ngnnttttgggt ttttgggccc cttnanggac cttccggatn gaaattaaat ccccgggncg 720  
gccg 724

<210> 39  
<211> 751  
<212> DNA  
<213> Homo sapien  
  
<220>  
<221> misc feature  
<222> (1)...(751)  
<223> n = A,T,C or G

<400> 39  
tttttttttt tttttctttg ctcacattta attttttattt tgattttttt taatgctgca 60  
caacacaata tttatttcat ttgtttcttt tatttcattht tatttggttg ctgctgctgt 120  
tttattttatt tttactgaaa gtgagaggga acttttgttg ctttttttcc tttttctgta 180  
ggccgcctta agctttctaa atttgaaca tctaagcaag ctgaanggaa aaggggggtt 240  
cgcaaaatca ctgggggga nggaaagggt gctttgttaa tcatgcccta tgggtgggtga 300  
ttaactgctt gtacaattac ntttctactt taattaattg tgctnaangc ttaattana 360  
cttgggggtt ccttccccc accaaccnccn ctgacaaaaa gtgccngccc tcaaatnatg 420  
tccccgcntt cnttgaaaca cacngcngaa ngttctcatt ntccccncnc caggtnaaaa 480  
tgaagggtta ccatntttta cncacactcc acntggcnnn gcctgaatcc tcnaaaancn 540  
ccttcaancn aatttctnng ccccggtcnc gcntnngtcc cncgggggt cgggaantn 600  
cacccccnga annnntnnc naacnaaatt ccgaaaatat tcccnntcnc tcaattcccc 660  
cnnagactnt cctcnnncn cncaattttt ttttnttcac gaacncgnnc cnnaaatgn 720  
nnnncnctc cncnngtcn naatcnccan c 751

<210> 40  
<211> 753  
<212> DNA  
<213> Homo sapien  
  
<220>  
<221> misc feature  
<222> (1)...(753)  
<223> n = A,T,C or G

<400> 40  
gtggtatttt ctgtaagatc aggtgttctt cctcgttagg ttttagaggaa acaccctcat 60  
agatgaaaac ccccccgaga cagcagcact gcaactgcca agcagccggg gtaggagggg 120  
cgccctatgc acagctgggc ccttgagaca gcagggttc gatgtcaggc tcgatgtcaa 180  
tggtctggaa gcggcggtg tacctgcgta ggggcacacc gtcaggggcc accaggaact 240  
tctcaaagtt ccaggcaacn tcgttgcgac acaccggaga ccagggtgatn agcttgggggt 300  
cggtcatacn cgcggtggcg tcgtcgttg gagctggcag ggcctcccgc aggaaggcna 360  
ataaaagggt cgcccccgca cgttcanc cgcacttctc naanaccatg angttgggt 420  
cnaaccacc accannccg acttcttga nggaattccc aaatctcttc gntcttgggc 480  
ttctnctgat gccctanctg gttgcccn gn atgccaanca nccccancc ccgggggtcct 540  
aaanaccn cctctcntt tcatctgggt tntntcccc ggaccntggt tcctctcaag 600  
ggancccata tctnaccan tactcacnt nccccccnt gnnaccanc cttctanngn 660  
tcccccccg ncctctggcc cntcaaan gcttnacna cctgggtctg ccttcccccc 720  
tncctatct gnaccccn n tttgtctcan tnt 753

<210> 41  
<211> 341  
<212> DNA  
<213> Homo sapien

<400> 41  
actatatcca tcacaacaga catgtttcat cccatagact tcttgacata gcttcaaagt 60  
agtgaacca tccttgattt atatacatat atgttctcag tattttggga gcctttccac 120  
ttctttaaac cttgttcatt atgaacactg aaaataggaa tttgtgaaga gttaaaaagt 180

## 18

tatagcttgt	ttacgtagta	agtttttgaa	gtctacattc	aatccagaca	cttagttgag	240
tgttaaactg	tgatttttaa	aaaatatcat	ttgagaatat	tctttcagag	gtattttcat	300
ttttactttt	tgattaattg	tgttttatat	attagggtag	t		341

<210> 42  
 <211> 101  
 <212> DNA  
 <213> Homo sapien

<400> 42						
acttactgaa	tttagttctg	tgctcttcct	tatttagtgt	tgtatcataa	atactttgat	60
gtttcaaaca	ttctaataa	ataattttca	gtggcttcac	a		101

<210> 43  
 <211> 305  
 <212> DNA  
 <213> Homo sapien

<400> 43						
acatctttgt	tacagtctaa	gatgtgttct	taaatcacca	ttccttcctg	gtcctcaccc	60
tccagggtgg	tctcacactg	taattagagc	tattgaggag	tctttacagc	aaattaagat	120
tcagatgect	tgctaagtct	agagttctag	agttatgttt	cagaaagtct	aagaaaccca	180
cctcttgaga	ggtcagtaaa	gaggacttaa	tatttcatat	ctacaaaatg	accacaggat	240
tggatacaga	acgagagtta	tcctggataa	ctcagagctg	agtacctgcc	cggggggccgc	300
tcgaa						305

<210> 44  
 <211> 852  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(852)  
 <223> n = A,T,C or G

<400> 44						
acataaatat	cagagaaaag	tagtctttga	aatattttacg	tccaggaggtt	ctttgtttct	60
gattattttg	tggtgtttt	ggtttgtgtc	caaagtattg	gcagcttcag	ttttcatttt	120
ctctccatcc	tcgggcattc	ttcccaaatt	tatataccag	tcttcgtcca	tccacacgct	180
ccagaatttc	tctttttag	taatatctca	tagctcggct	gagcttttca	taggtcatgc	240
tgctgttgtt	cttcttttta	ccccatagct	gagccactgc	ctctgatttc	aagaacctga	300
agacgccctc	agatcgggtc	tcccatttta	ttaatcctgg	gttcttgtct	gggttcaaga	360
ggatgtcgcg	gatgaattcc	cataagttag	tccctctcgg	gttgtgtctt	ttggtgtggc	420
acttggcagg	ggggtcttgc	tcctttttca	tatcaggtga	ctctgcaaca	ggaaggtgac	480
tggtggttgt	catggagatc	tgagcccggc	agaaagtttt	gctgtccaac	aaatctactg	540
tgctaccata	gttggtgtca	tataaatagt	tctngtcttt	ccagggtgtc	atgatggaag	600
gctcagtttg	ttcagttctg	acaatgacat	tggtgtgtga	ctggaacagg	tcactactgc	660
actggccgtt	ccacttcaga	tgctgcaagt	tgctgtagag	gagntgcccc	gccgtccctg	720
ccgcccggtt	gaactcctgc	aaactcatgc	tgcaaaaggtg	ctcgccgttg	atgtcgaaact	780
cntggaaagg	gatacaattg	gcatccagct	ggttggtgtc	caggaggtga	tggagccact	840
cccacacctg	gt					852

<210> 45  
 <211> 234  
 <212> DNA  
 <213> Homo sapien

<400> 45						
acaacagacc	cttgctcgtc	aacgacctca	tgctcatcaa	gttggacgaa	tccgtgtccg	60
agtctgacac	catccggagc	atcagcattg	cttcgcagtg	ccctaccgcg	gggaactctt	120
gcctcgtttc	tggtctgggt	ctgctggcga	acggcagaat	gcctaccgtg	ctgcagtgcg	180

tgaacgtgtc ggtggtgtct gaggaggtct gcagtaagct ctatgacccg ctgt 234

<210> 46  
 <211> 590  
 <212> DNA  
 <213> Homo sapien  
 <220>  
 <221> misc\_feature  
 <222> (1)...(590)  
 <223> n = A,T,C or G

<400> 46  
 acttttttatt taaatgttta taaggcagat ctatgagaat gatagaaaac atggtgtgta 60  
 atttgatagc aatatttttg agattacaga gtttttagtaa ttaccaatta cacagttaaa 120  
 aagaagataa tatattccaa gcanatacaa aatatctaata gaaagatcaa ggcaggaaaa 180  
 tgantataac taattgacaa tggaaaatca attttaaatgt gaattgcaca ttatccttta 240  
 aaagctttca aaanaaaanaa ttattgcagt ctanttaatt caaacagtgt taaatggtat 300  
 caggataaan aactgaaggg canaaagaat taattttcac ttcattgtaac ncacccanatt 360  
 ttacaatggc ttaaattgcan ggaaaaagca gtggaagtag ggaagtantc aaggtctttc 420  
 tggctctctaa tctgccttac tctttgggtg tggctttgat cctctggaga cagctgccag 480  
 ggctcctgtt atatccacaa tcccagcagc aagatgaagg gatgaaaaag gacacatgct 540  
 gccttccttt gaggagactt catctcactg gccaacactc agtcacatgt 590

<210> 47  
 <211> 774  
 <212> DNA  
 <213> Homo sapien  
 <220>  
 <221> misc\_feature  
 <222> (1)...(774)  
 <223> n = A,T,C or G

<400> 47  
 acaagggggc ataatagaagg agtggggana gatttttaaag aaggaaaaaa aacgaggccc 60  
 tgaacagaat tttcctgnac aacggggcctt caaaataaatt ttcttgggga gggtcaagac 120  
 gcttactgct ttgaaactta aatggatgtg ggacanaaatt ttctgtaatg accctgaggg 180  
 cattacagac gggactctgg gaggaaggat aaacagaaaag gggacaaaagg ctaatcccaa 240  
 aacatcaaag aaaggaagggt ggcgtcatat ctcccagcct acacagttct ccagggtctct 300  
 cctcatccct ggaggacgac agtggaggaa caactgacca tgtcccagg ctctgtgtg 360  
 ctggctcctg gtcttcagcc cccagctctg gaagcccacc ctctgtgtat cctgcgtggc 420  
 ccacactcct tgaacacaca tcccaggtt atattccttg acatggctga acctcctatt 480  
 cctacttccg agatgccttg ctccctgcag cctgtcaaaa tcccactcac cctccaaacc 540  
 acggcatggg aagcctttct gacttgcttg attactccag catcttggaa caatccctga 600  
 ttcccactc cttagaggca agatagggtg gtttaagagta gggctggacc acttggagcc 660  
 aggtgtgtgg cttcaaattn tggctcattt acgagctatg ggaccttggg caagtatct 720  
 tcacttctat gggcntcatt ttgttctacc tgcaaaatgg gggataataa tagt 774

<210> 48  
 <211> 124  
 <212> DNA  
 <213> Homo sapien  
 <220>  
 <221> misc\_feature  
 <222> (1)...(124)  
 <223> n = A,T,C or G

<400> 48  
 canaaattga aattttataa aaaggcattt ttctcttata tccataaaat gatataattt 60  
 ttgcaantat anaaatgtgt cataaattat aatgttcctt aattacagct caacgcaact 120

tggt 124

<210> 49  
 <211> 147  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(147)  
 <223> n = A,T,C or G

<400> 49  
 gccgatgcta ctatitttatt gcaggaggtg ggggtgtttt tattattctc tcaacagctt 60  
 tgtggctaca ggtggtgtct gactgcatna aaaanttttt tacgggtgat tgcaaaaatt 120  
 ttagggcacc catatcccaa gcantgt 147

<210> 50  
 <211> 107  
 <212> DNA  
 <213> Homo sapien

<400> 50  
 acattaaatt aataaaagga ctgttgggggt tctgctaaaa cacatggctt gatataattgc 60  
 atggtttgag gttaggagga gttaggcata tgttttggga gaggggt 107

<210> 51  
 <211> 204  
 <212> DNA  
 <213> Homo sapien

<400> 51  
 gtcctaggaa gtctagggga cacacgactc tggggtcacg gggccgacac acttgcaagg 60  
 cggaaggaa aggcagagaa gtgacaccgt cagggggaaa tgacagaaag gaaaatcaag 120  
 gccttgcaag gtcagaaagg ggactcaggg cttccaccac agccctgcc cacttgcca 180  
 cctccctttt gggaccagca atgt 204

<210> 52  
 <211> 491  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(491)  
 <223> n = A,T,C or G

<400> 52  
 acaaagataa catttatctt ataacaaaaa tttgatagtt ttaaaggtta gtattgtgta 60  
 gggatatttc caaaagacta aagagataac tcaggtaaaa agttagaaat gtataaaaca 120  
 ccatcagaca ggtttttaaa aaacaacata ttacaaaatt agacaatcat cttaaaaaaa 180  
 aaaacttctt gtatcaattt cttttgttca aaatgactga cttaantatt tttaaattatt 240  
 tcanaaacac ttctcaaaaa attttcaana tggtagcttt canatgtnc ctcagtccca 300  
 atgttgctca gataaataaa tctcgtgaga acttaccacc caccacaagc tttctggggc 360  
 atgcaacagt gtcttttctt tnccttttct tttttttttt ttacaggcac agaaactcat 420  
 caattttatt tggataacaa agggctccca aattatattg aaaaataaat ccaagttaat 480  
 atcactcttg t 491

<210> 53  
 <211> 484  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(484)  
 <223> n = A,T,C or G

<400> 53  
 acataattta gcagggctaa ttaccataag atgctattta ttaanaggtn tatgatctga 60  
 gtattaacag ttgctgaagt ttggtatttt tatgcagcat tttctttttg ctttgataac 120  
 actacagaac ccttaaggac actgaaaatt agtaagtaaa gttcagaaac attagctgct 180  
 caatcaaate tctacataac actatagtaa ttaaaacgtt aaaaaaaagt gttgaaatct 240  
 gcactagtat anaccgctcc tgtcaggata anactgcttt ggaacagaaa gggaaaaanc 300  
 agcttttgant ttctttgtgc tgatanggag aaaggctgaa ttaccttggt gcctctccct 360  
 aatgattggc aggtcnggta aatnccaaaa catattccaa ctcaacactt cttttccncg 420  
 tancttgant ctgtgtattc caggancagg cggtatggaat gggccagccc ncggatgttc 480  
 cant 484

<210> 54  
 <211> 151  
 <212> DNA  
 <213> Homo sapien

<400> 54  
 actaaacctc gtgcttgtga actccataca gaaaacgggtg ccatccctga acacggctgg 60  
 ccactgggta tactgtgac aaccgcaaca acaaaaacac aaatccttgg cactggctag 120  
 tctatgtcct ctcaagtgcc tttttgtttg t 151

<210> 55  
 <211> 91  
 <212> DNA  
 <213> Homo sapien

<400> 55  
 acctggcttg tctccgggtg gttcccggcg cccccacgg tccccagaac ggacactttc 60  
 gccctccagt ggatactcga gccaaagtgg t 91

<210> 56  
 <211> 133  
 <212> DNA  
 <213> Homo sapien

<400> 56  
 ggcggtatgt cgttggttat atacaaatat gtcattttat gtaagggact tgagtatact 60  
 tggatttttg gtatctgtgg gttgggggga cggtccagga accaatacc catggatacc 120  
 aagggaac tgt 133

<210> 57  
 <211> 147  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(147)  
 <223> n = A,T,C or G

<400> 57  
 actctggaga acctgagccg ctgctccgcc tctgggatga ggtgatgcan gcngtggcgc 60  
 gactgggagc tgagcccttc cctttgcgcc tgcctcagag gattgttgcc gacntgcana 120  
 tctcantggg ctggatncat gcagggt 147

<210> 58

<211> 198  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(198)  
 <223> n = A,T,C or G

<400> 58  
 acagggatat aggtttnaag ttattgtnat tgtaaaatac attgaatttt ctgtatactc 60  
 tgattacata cttttatcct ttaaaaaaga tgtaaactctt aattttttatg ccactctatta 120  
 atttaccat gagttacctt gtaaatgaga agtcatgata gcactgaatt ttaactagtt 180  
 ttgacttcta agtttggt 198

<210> 59  
 <211> 330  
 <212> DNA  
 <213> Homo sapien

<400> 59  
 acaacaaatg ggttgtagg aagtcttatac agcaaaactg gtgatggcta ctgaaaagat 60  
 ccattgaaaa ttatcattaa tgatttttaa tgacaagtta tcaaaaactc actcaatttt 120  
 cacctgtgct agcttgctaa aatgggagtt aactctagag caaatatagt atcttctgaa 180  
 tacagtcaat aaatgacaaa gccagggcct acaggtgggt tccagacttt ccagaccag 240  
 cagaaggaat ctattttatc acatggatct ccgtctgtgc tcaaaatacc taatgatatt 300  
 tttcgtcttt attggacttc tttgaagagt 330

<210> 60  
 <211> 175  
 <212> DNA  
 <213> Homo sapien

<400> 60  
 accgtgggtg ctttctacat tcttgacggc tccttcacca acatctgggt ctacttcggc 60  
 gtcgtgggct ctttctctt cctctcctc cagctgggtg tgctcatcga ctttgccgcac 120  
 tcctggaacc agcggtaggt gggcaaggcc gaggagtgcg attcccgtgc ctggt 175

<210> 61  
 <211> 154  
 <212> DNA  
 <213> Homo sapien

<400> 61  
 accccacttt tctcctgtg agcagttctg acttctcact gctacatgat gagggtagt 60  
 gggtgttgct cttcaacagt atcctccctt ttccggatct gctgagccgg acagcagtgc 120  
 tggactgcac agccccggg ctccacattg ctgt 154

<210> 62  
 <211> 30  
 <212> DNA  
 <213> Homo sapien

<400> 62  
 cgctcgagcc ctatagtgag tcgtattaga 30

<210> 63  
 <211> 89  
 <212> DNA  
 <213> Homo sapien

<400> 63



acaagtcatt tcagcaccct ttgctcttca aaactgacca tcttttatat ttaatgcttc 60  
ctgtatgaat aaaaatgggt atgtcaagt 89

<210> 64  
<211> 97  
<212> DNA  
<213> Homo sapien

<400> 64  
accggagtaa ctgagtcggg acgctgaatc tgaatccacc aataaataaa ggttctgcag 60  
aatcagtga tccaggattg gtccttggat ctggggt 97

<210> 65  
<211> 377  
<212> DNA  
<213> Homo sapien

<220>  
<221> misc\_feature  
<222> (1) ... (377)  
<223> n = A,T,C or G

<400> 65  
acaacaanaa ntcccttctt taggccactg atggaaacct ggaacccctt tttgatggca 60  
gcatggcgtc ctaggccttg acacagcggc tgggggtttg gctntcccaa accgcacacc 120  
ccaaccctgg tctaccaca nttctggcta tgggctgtct ctgccactga acatcagggt 180  
tcggtcataa natgaaatcc caanggggac agaggtcagt agaggaagct caatgagaaa 240  
ggtgctgttt gtcagccag aaaacagctg cctggcattc gccgctgaac tatgaaccgg 300  
tgggggtgaa ctaccccccag gaggaatcat gcctgggcga tgcaanggtg ccaacaggag 360  
ggcggggagg agcatgt 377

<210> 66  
<211> 305  
<212> DNA  
<213> Homo sapien

<400> 66  
acgcctttcc ctcagaattc agggaagaga ctgtcgctg ccttcctccg ttgttgctg 60  
agaacccgtg tgccccttcc caccatatcc accctcgctc catctttgaa ctcaaacacg 120  
aggaaactaac tgcaccctgg tctctctccc agtccccagt tcaccctcca tccctcacct 180  
tcctccactc taagggatat caacactgcc cagcacaggg gccctgaatt tatgtggttt 240  
ttatatattt tttaataaga tgcactttat gtcatttttt aataaagtct gaagaattac 300  
tggtt 305

<210> 67  
<211> 385  
<212> DNA  
<213> Homo sapien

<400> 67  
actacacaca ctccacttgc ccttgtgaga cactttgtcc cagcacttta ggaatgctga 60  
ggtcggacca gccacatctc atgtgcaaga ttgccagca gacatcaggt ctgagagttc 120  
cccttttaaa aaaggggact tgcttaaaaa agaagtctag ccacgattgt gttagagcagc 180  
tgtgctgtgc tggagattca cttttgagag agttctcctc tgagacctga tctttagagg 240  
ctgggcagtc ttgcacatga gatggggctg gtctgatctc agcactcctt agtctgcttg 300  
cctctcccag ggccccagcc tggccacacc tgcttacagg gcactctcag atgccatac 360  
catagtttct gtgctagtgg accgt 385

<210> 68  
<211> 73  
<212> DNA  
<213> Homo sapien

<400> 68  
 acttaaccag atatattttt accccagatg gggatattct ttgtaaaaaa tgaaaaataaa 60  
 gtttttttaa tgg 73

<210> 69  
 <211> 536  
 <212> DNA  
 <213> Homo sapien  
 <220>  
 <221> misc\_feature  
 <222> (1)...(536)  
 <223> n = A,T,C or G

<400> 69  
 actagtccag tgtggtggaa ttccattgtg ttgggggctc tcaccctcct ctctcgcagc 60  
 tccagctttg tgctctgcct ctgaggagac catggcccag catctgagta cctgctgct 120  
 cctgctggcc accctagctg tggccctggc ctggagcccc aaggaggagg ataggataat 180  
 cccgggtggc atctataacg cagacctcaa tgatgagtgg gtacagcgtg cccttcactt 240  
 cgccatcagc gagtataaca aggccaccaa agatgactac tacagacgtc cgctgcgggt 300  
 actaagagcc aggcaacaga ccgttggggg ggtgaattac ttcttcgacg tagagggtggg 360  
 ccgaaccata tgtaccaagt ccagcccaa cttggacacc tgtgccttcc atgaacagcc 420  
 agaactgcag aagaaacagt tgtgctcttt cgagatctac gaagttccct ggggagaaca 480  
 gaangtcctt gggtgaaatc caggtgtcaa gaaatcctan ggatctgttg ccaggc 536

<210> 70  
 <211> 477  
 <212> DNA  
 <213> Homo sapien

<400> 70  
 atgaccctta acagggggcc tctcagccct cctaattgacc tccggcctag ccatgtgatt 60  
 tcacttccac tccataacgc tctcataact aggctacta accaaccacac taaccatata 120  
 ccaatgatgg cgcgatgtaa cagagaaaag cacataccaa ggccaccaca caccacctgt 180  
 ccaaaaaggc cttcgatacg ggataatcct atttattacc tcagaagttt ttttcttcgc 240  
 agggattttt ctgagccttt taccactcca gcctagcccc taccctccaa ctaggaggggc 300  
 actggccccc aacaggcatc accccgctaa atcccctaga agtcccactc ctaaaacacat 360  
 ccgtattact cgcatacagga gtatcaatca cctgagctca ccatagtcta atagaaaaca 420  
 accgaaacca aattattcaa agcactgctt attacaattt tactgggtct ctatttt 477

<210> 71  
 <211> 533  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(533)  
 <223> n = A,T,C or G

<400> 71  
 agagctatag gtacagtgtg atctcagctt tgcaaacaca ttttctacat agatagtact 60  
 aggtattaat agatatgtaa agaaagaaat cacaccatta ataatggtaa gattgggttta 120  
 tgtgatttta gtggtatttt tggcaccctt atatattgtt tccaaacttt cagcagtgat 180  
 attatttcca taactttaaaa agtgagtgtg aaaaagaaaa tctccagcaa gcattctcatt 240  
 taaataaagg tttgtcatct ttaaaaatac agcaatatgt gactttttta aaaaagctgtc 300  
 aaataggtgt gaccctacta ataattatta gaaatacatt taaaaacatc gagtacctca 360  
 agtcagtttg ccttgaaaaa tatcaaatat aactcttaga gaaatgtaca taaaagaatg 420  
 cttcgttaatt ttggagtang aggttccctc ctcaattttg tattttttaa aagtacatgg 480  
 taaaaaaaaa aattcacaac agtatataag gctgtaaaaa gaagaattct gcc 533

<210> 72

<211> 511  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(511)  
 <223> n = A,T,C or G

<400> 72  
 tattacggaa aaacacacca cataattcaa ctancaaaga anactgcttc agggcggtgta 60  
 aaatgaaagg cttccaggca gttatctgat taaagaacac taaaagaggg acaaggctaa 120  
 aagccgcagg atgtctacac tatancaggc gctatttggg ttggctggag gagctgtgga 180  
 aaacatggan agattgggtc tgganacgc cgtggctatt cctcattgtt attacanagt 240  
 gaggttctct gtgtgcccac tggtttgaaa accgttctnc aataatgata gaatagtaca 300  
 cacatgagaa ctgaaatggc ccaaaccag aaagaaagcc caactagatc ctcagaaanac 360  
 gcttctaggg acaataaccg atgaagaaaa gatggcctcc ttgtgcccc gtctgttatg 420  
 atttctctcc attgcagcna naaaccggtt cttctaagca aacncagggtg atgatggcna 480  
 aaatacaccc cctcttgaag naccnggagg a 511

<210> 73  
 <211> 499  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(499)  
 <223> n = A,T,C or G

<400> 73  
 cagtgccagc actggtgccca gtaccagtac caataacagt gccagtgccca gtgccagcac 60  
 cagtgggtggc ttcagtgtct gtgccagcct gaccgccact ctcacatttg ggctcttcgc 120  
 tggccttggg ggagctgggt ccagcaccag tggcagctct ggtgcctgtg gtttctccta 180  
 caagtgaagt ttttagatatt gttaatcctg ccagtccttc tcttcaagcc aggggtgcatc 240  
 ctcagaaacc tactcaacac agcactctag gcagccacta tcaatcaatt gaagttgaca 300  
 ctctgcatta aatctatttg ccatttctga aaaaaaaaaa aaaaaaaggg cggccgctcg 360  
 antctagagg gcccgtttta acccgctgat cagcctcgac tgtgccttct anttgccagc 420  
 catctgttgt ttgccctcc cccgntgcct tccttgacct tggaaagtgc cactcccact 480  
 gtcctttcct aantaaaaat 499

<210> 74  
 <211> 537  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(537)  
 <223> n = A,T,C or G

<400> 74  
 tttcatagga gaacacactg aggagatact tgaagaattt ggattcagcc gcgaagagat 60  
 ttatcagctt aactcagata aaatcattga aagtaataag gtaaaagcta gtctctaact 120  
 tccaggccca cggctcaagt gaatttgaat actgcattta cagtgtagag taacacataa 180  
 cattgtatgc atggaaacat ggaggaacag tattacagtg tcctaccact ctaatcaaga 240  
 aaagaattac agactctgat tctacagtga tgattgaatt ctaaaaatgg taatcattag 300  
 ggcttttgat ttataanact ttgggtactt atactaaatt atggtagtta tactgccttc 360  
 cagtttgctt gatataattg ttgatattaa gattcttgac ttatatattg aatgggttct 420  
 actgaaaaan gaatgatata ttcttgaaga catcgatata catttattta cactcttgat 480  
 tctacaatgt agaaaaatgaa ggaaatgcc caaattgtat ggtgataaaa gtcccgt 537

<210> 75  
 <211> 467  
 <212> DNA  
 <213> Homo sapien  
  
 <220>  
 <221> misc\_feature  
 <222> (1)...(467)  
 <223> n = A,T,C or G

<400> 75  
 caaanacaat tgttcaaaag atgcaaatga tacactactg ctgcagctca caaacacctc 60  
 tgcattattac acgtacctcc tcctgctcct caagtagtgt ggtctatatt gccatcatca 120  
 cctgctgtct gcttagaaga acggctttct gctgcaangg agagaaatca taacagacgg 180  
 tggcacaagg aggccatctt ttcctcatcg gttattgtcc ctagaagcgt cttctgagga 240  
 tctagtggg ctttctttct gggtttgggc catttcantt ctcatgtgtg tactattcta 300  
 tcattattgt ataacgggtt tcaaaccngt gggcacncag agaacctcac tctgtaataa 360  
 caatgaggaa tagccacggg gatctccagc accaaatctc tccatgttnt tccagagctc 420  
 ctccagccaa cccaaatagc cgctgctatn gtgtagaaca tccctgn 467

<210> 76  
 <211> 400  
 <212> DNA  
 <213> Homo sapien  
  
 <220>  
 <221> misc\_feature  
 <222> (1)...(400)  
 <223> n = A,T,C or G

<400> 76  
 aagctgacag cattcgggccc gagatgtctc gctccgtggc cttagctgtg ctgcgcgtac 60  
 tctctctttc tggcctggag gctatccagc gtactccaaa gattcagggt tactcacgtc 120  
 atccagcaga gaattgaaaag tcaaatttcc tgaattgcta tgtgtctggg tttcatccat 180  
 ccgacattga agttgactta ctgaagaatg gagagagaat tgaaaaagt gagcattcag 240  
 acttgtcttt cagcaaggac tgggtctttct atctcttgta ctacactgaa ttcaccccca 300  
 ctgaaaaaga tgagtatgcc tgccgtgtga accatgtgac tttgtcacag cccaagatng 360  
 tttagtggga tcganacatg taagcagcan catgggaggt 400

<210> 77  
 <211> 248  
 <212> DNA  
 <213> Homo sapien

<400> 77  
 ctggagtgcc ttggtgtttc aagccccctgc aggaagcaga atgcaccttc tgaggcacct 60  
 ccagctgccc cggcggggga tgcgaggctc ggagcaccct tgcccggctg tgattgctgc 120  
 caggcactgt tcatctcagc ttttctgtcc ctttgtctcc ggcaagcgt tctgtgaaa 180  
 gttcatatct ggagcctgat gtcttaacga ataaaggctc catgctccac ccgaaaaaaa 240  
 aaaaaaaaaa 248

<210> 78  
 <211> 201  
 <212> DNA  
 <213> Homo sapien

<400> 78  
 actagtccag tgtggtggaa ttccattgtg ttgggcccac cacaatggct acctttaaca 60  
 tcaaccagac cccgccctgc ccgtgcccac cgctgctgct aacgacagta tgatgcttac 120  
 tctgtacttc ggaaactatt tttatgtaat taatgtatgc tttcttgttt ataaatgctc 180  
 gatttaaaaa aaaaaaaaaa a 201

<210> 79  
 <211> 552  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(552)  
 <223> n = A,T,C or G

<400> 79  
 tccttttgtt aggtttttga gacaacccta gacctaaact gtgtcacaga cttctgaatg 60  
 ttttaggcagt gctagtaatt tcctcgtaat gattctgtta ttactttcct attcctttatt 120  
 cctcctttctt ctgaagatta atgaagttga aaattgaggt ggataaatat aaaaaggtag 180  
 tgtgatagta taagtatcta agtgcagatg aaagtgtgtt atatatatcc attcaaaatt 240  
 atgcaagtta gtaattactc agggttaact aaattacttt aatatgctgt tgaacctact 300  
 ctgttccttg gctagaaaaa attataaaaca ggactttgtt agtttgggaa gccaaattga 360  
 taatattcta tgtttctaaa gttgggctat acataaanta tnaagaaata tgggaatttta 420  
 ttcccaggaa tatgggggtc atttatgaat antacccggg anagaagttt tgantnaaac 480  
 cngttttggt taatacgtta atatgtcctn aatnaacaag gcntgactta tttccaaaaa 540  
 aaaaaaaaaa aa 552

<210> 80  
 <211> 476  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(476)  
 <223> n = A,T,C or G

<400> 80  
 acagggattt gagatgctaa ggccccagag atcgtttgat ccaaccctct tattttcaga 60  
 ggggaaaatg gggcctagaa gttacagagc atctagctgg tgcgctggca cccctggcct 120  
 cacacagact cccgagtagc tgggactaca ggcacacagt cactgaagca ggccctgttt 180  
 gcaattcacg ttgccacctc caacttaaac attcttcata tgtgatgtcc ttagtcacta 240  
 aggttaaact ttcccaccca gaaaaggcaa cttagataaa atcttagagt actttcatac 300  
 tcttctaagt cctcttccag cctcactttg agtcctcctt gggggttgat aggaantntc 360  
 tcttggtttt ctcaataaaa tctctatcca tctcatgttt aatttggtac gcntaaaaat 420  
 gctgaaaaaa ttaaatgtt ctggtttcnc tttaaaaaaa aaaaaaaaaa aaaaaa 476

<210> 81  
 <211> 232  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(232)  
 <223> n = A,T,C or G

<400> 81  
 tttttttttg tatgcntcn ctgtgnggtt attgttgctg ccaccctgga ggagcccagt 60  
 ttcttctgta tctttctttt ctgggggatc ttcttggtc tgccctcca ttcccagcct 120  
 ctcatcccca tcttgcaatt ttgctagggt tggaggcgct ttctggtag cccctcagag 180  
 actcagtcag cgggaataag tcctaggggt ggggggtgtg gcaagccggc ct 232

<210> 82  
 <211> 383  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(383)  
 <223> n = A,T,C or G

<400> 82  
 aggcgggagc agaagctaaa gccaaagccc aagaagagtg gcagtgccag cactggtgcc 60  
 agtaccagta ccaataacat gccagtgcc gtgccagcac cagtgggtggc ttcagtgtctg 120  
 gtgccagcct gaccgccact ctacatttg ggctcttcgc tggccttggg ggagctggtg 180  
 ccagcaccag tggcagctct ggtgcctgtg gtttctccta caagtgaat tttagatatt 240  
 gttaatcctg ccagtctttc tcttcaagcc aggggtgcac ctcagaaacc tactcaacac 300  
 agcactctng gcagccacta tcaatcaatt gaagttgaca ctctgcatta aatctatttg 360  
 ccatttcaaa aaaaaaaaaa aaa 383

<210> 83  
 <211> 494  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(494)  
 <223> n = A,T,C or G

<400> 83  
 accgaattgg gaccgctggc ttataagcga tcatgtcctc cagtattacc tcaacgagca 60  
 gggagatcga gtctatacgc tgaagaaatt tgaccgatg ggacaacaga cctgctcagc 120  
 ccatcctgct cggttctccc cagatgacaa atactctcga caccgaatca ccatcaagaa 180  
 acgcttcaag gtgctcatga cccagcaacc gcgccctgtc ctctgagggt ccttaaactg 240  
 atgtcttttc tgccacctgt taccctcgg agactccgta accaaactct tcggactgtg 300  
 agccctgatg cctttttgccc agccatactc tttggentcc agtctctcgt ggcgattgat 360  
 tatgcttggt tgaggcaatc atggtggcat caccatnaa gggaacacat ttganttttt 420  
 tttncatat tttaaattac naccagaata ntccagaata aatgaattga aaaactctta 480  
 aaaaaaaaaa aaaa 494

<210> 84  
 <211> 380  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(380)  
 <223> n = A,T,C or G

<400> 84  
 gctggtagcc tatggcgtgg ccacggangg gctcctgagg cacgggacag tgacttccca 60  
 agtatcctgc gccgcgtctt ctaccgtccc tacctgcaga tcttcgggca gattccccag 120  
 gaggacatgg acgtggccct catggagcac agcaactgct cgtcggagcc cggcttctgg 180  
 gcacaccctc ctggggccca ggcgggcacc tgcgtctccc agtatgccaa ctggctggtg 240  
 gtgctgtccc tcgtcatctt cctgctcgtg gccaacatcc tgctggtcac ttgctcattg 300  
 ccatgttcag ttacacattc ggcaaagtac agggcaacag cnatctctac tgggaaggcc 360  
 agcgttnccg cctcatccgg 380

<210> 85  
 <211> 481  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature

&lt;222&gt; (1)...(481)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 85

gagtttagctc	ctccacaacc	ttgatgaggt	cgtctgcagt	ggcctctcgc	ttcataccgc	60
tnccatcgtc	atactgtagg	tttgccacca	cctcctgcat	cttggggcgg	ctaatatcca	120
ggaaactctc	aatcaagtca	ccgtcnatna	aacctgtggc	tggttctgtc	ttccgctcgg	180
tgtgaaagga	tctccagaag	gagtgtctga	tcttccccac	acttttgatg	actttattga	240
gtcgattctg	catgtccagc	aggaggttgt	accagctctc	tgacagttag	gtcaccagcc	300
ctatcatgcc	nttgaacgtg	ccgaagaaca	ccgagccttg	tgtggggggg	gnagtctcac	360
ccagattctg	cattaccaga	nagccgtggc	aaaaganatt	gacaactcgc	ccaggnggaa	420
aaagaacacc	tcttggaagt	gctngccgct	cctcgtccnt	tggtggnggc	gcntnccttt	480
t						481

&lt;210&gt; 86

&lt;211&gt; 472

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(472)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 86

aacatcttcc	tgtataatgc	tgtgtaatat	cgatccgatn	ttgtctgctg	agaattcatt	60
acttggaana	gcaacttnaa	gcctggacac	tggtattaaa	attcacaata	tgcaacactt	120
taaacagtgt	gtcaatctgc	tcccttactt	tgatcatcacc	agtctgggaa	taagggtatg	180
ccctattcac	acctgttaaa	agggcgctaa	gcatttttga	ttcaacatct	ttttttttga	240
cacaagtcg	aaaaaagcaa	aagtaaacag	ttnttaattt	gtagccaat	tcactttctt	300
catgggacag	agccatttga	tttaaaaagc	aaattgcata	atattgagct	ttgggagctg	360
atatntgagc	ggaagantag	cctttctact	tcaccagaca	caactccttt	catattggga	420
tgtnacnaa	agttatgtct	cttacagatg	ggatgctttt	gtggcaattc	tg	472

&lt;210&gt; 87

&lt;211&gt; 413

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(413)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 87

agaaaccagt	atctctnaaa	acaacctctc	ataccttggt	gacctaat	tgtgtgcgtg	60
tgtgtgtg	cgcatattat	atagacaggc	acatcttttt	tacttttgta	aaagcttatg	120
cctctttggt	atctatatct	gtgaaagttt	taatgatctg	ccataatgtc	ttggggacct	180
ttgtcttctg	tgtaaatggt	actagagaaa	acacctatnt	tatgagtcaa	tctagttngt	240
tttattcgac	atgaaggaaa	tttccagatn	acaacactna	caaactctcc	cttgactagg	300
ggggacaaa	aaaagcnaaa	ctgaacatna	gaaacaattn	cctgggtgaga	aattncataa	360
acagaaattg	ggtngtatat	tgaaanann	catcattnaa	acgttttttt	ttt	413

&lt;210&gt; 88

&lt;211&gt; 448

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(448)

&lt;223&gt; n = A,T,C or G

<400> 88  
 cgcagcgggt cctctctatc tagctccagc ctctcgctg cccactccc cgcgtcccgc 60  
 gtcctagccn accatggccg ggccccctgc cgccccctg ctctgtctgg ccactcctggc 120  
 cgtggccctg gccgtgagcc ccgcggcccg ctccagtccc ggcaagccgc cgcgcctggg 180  
 gggaggccca tggacccgc gtggaagaag aagggtgtgc gcgtgactg gactttgccg 240  
 tcggcnanta caacaaacc gcaacnactt ttaccnagcn cgcgctgcag gttgtgccgc 300  
 cccaancaaa ttgttactng gggtaantaa ttcttggaag ttgaacctgg gccaaacnng 360  
 tttaccagaa ccnagccaat tngaacaatt nccccccat aacagcccct tttaaaaagg 420  
 gaancantcc tgntcttttc caaat ttt 448

<210> 89  
 <211> 463  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(463)  
 <223> n = A,T,C or G

<400> 89  
 gaattttgtg cactggccac tgtgatggaa ccattgggcc aggatgcttt gagtttatca 60  
 gtagtgattc tgccaaagt ggtgttgtaa catgagtatg taaaatgtca aaaaattagc 120  
 agaggcttag gtctgcatat cagcagacag tttgtccgtg tattttgtag ccttgaagtt 180  
 ctcaagtaca agttnnttct gatgcgaagt tctnattcca gtgttttagt cctttgcac 240  
 tttnatgttn agacttgcc ctntnaaatt gcttttgtnt tctgcaggta ctatctgtgg 300  
 ttttaacaaa tagaannact tctctgcttn gaanatttga atatcttaca tctnaaaatn 360  
 aattctctcc ccatannaaa acccangccc ttgggganaat ttgaaaaang gntccttcnn 420  
 aattcnnana anttcagntn tcatacaaca naacngganc ccc 463

<210> 90  
 <211> 400  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(400)  
 <223> n = A,T,C or G

<400> 90  
 agggattgaa ggtctnttnt actgtcggac tgttcancca ccaactctac aagttgctgt 60  
 cttccactca ctgtctgtaa gcntnttaac ccagactgta tcttcataaa tagaacaat 120  
 tcttcaccag tcacatcttc taggaccttt ttggattcag ttagtataag ctcttccact 180  
 tcctttgtta agacttcac tggtaaagtc ttaagttttg tagaaaggaa ttttaattgct 240  
 cgttctctaa caatgtcctc tccttgaagt atttggtgta acaaccacc tnaagtcct 300  
 ttgtgcatcc attttaaata tacttaatag ggcattggtn cactagggtta aattctgcaa 360  
 gagtcatctg tctgcaaaaag ttgcgttagt atatctgcc 400

<210> 91  
 <211> 480  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(480)  
 <223> n = A,T,C or G

<400> 91  
 gagctcggat ccaataatct ttgtctgagg gcagcacaca tatncagtgc catggnaact 60



ggctaccccc	acatgggagc	agcatgccgt	agntatataa	ggtcattccc	tgagtcagac	120
atgcctcttt	gactaccgtg	tgccagtgt	ggtgattctc	acacacctcc	nncgcgtctt	180
tgtggaaaaa	ctggcacttg	nctggaacta	gcaagacatc	acttacaaat	tcacccacga	240
gacacttgaa	aggtgtaaca	aagcgactct	tgcattgctt	tttgtccctc	cggcaccagt	300
tgtcaatact	aaccgcgtgg	tttgcctcca	tcacatttgt	gatctgtagc	tctggatata	360
tctcctgaca	gtactgaaga	acttcttctt	ttgtttcaaa	agcaactctt	ggcgcctgtt	420
ngatcagggt	cccatttccc	agtccgaatg	ttcacatggc	atatnttact	tcccacaaaa	480

<210> 92  
 <211> 477  
 <212> DNA  
 <213> Homo sapien  
  
 <220>  
 <221> misc\_feature  
 <222> (1)...(477)  
 <223> n = A,T,C or G

<400> 92	
atacagccca	natccccacca
gggtcccgtg	tagccccagc
cccacgcagg	cagcagcggg
taantgcagg	aagaggctga
tgcagcgaaa	ctcctcgatg
gaaccttccg	cctgttctct
accagcggac	aaacggcggt
aggaacggcn	ccagcgtgtc
cgaagatgcg	cttgttgact
gactctccac	ctgctggaag
gccgggtcaat	gaactccact
gtccaccagg	atgcccagct
ggaagcgaat	gangcccagg
gccttgcccc	ccgctnacac
tgcccantgt	gtcgcgctcc
aatggcg	
	60
	120
	180
	240
	300
	360
	420
	477

<210> 93  
 <211> 377  
 <212> DNA  
 <213> Homo sapien  
  
 <220>  
 <221> misc\_feature  
 <222> (1)...(377)  
 <223> n = A,T,C or G

<400> 93	
gaacggctgg	accttgccctc
agtcctgagca	gccccagacc
cgcctcaatg	cagaaccant
tgattttact	tggaatttct
caacaacaaa	ataacatgtt
aagaaaatat	tactgtttaca
ataaatatat	tattaaa
gctggcagga	ataccttggc
gaagctaagc	ctgcctcttg
ctgtgtttag	agttaagagt
tagcttttcc	caatgctaata
gttggtataaa	agtangtgat
gcaantttctg	tatttatttg
	60
	120
	180
	240
	300
	360
	377

<210> 94  
 <211> 495  
 <212> DNA  
 <213> Homo sapien  
  
 <220>  
 <221> misc\_feature  
 <222> (1)...(495)  
 <223> n = A,T,C or G

<400> 94	
ccctttgagg	ggttagggtc
cgagctgang	cagatttccc
ccaaggaaaag	accaccttct
gaaggcccca	ttccgggggt
cagttcccag	tggaagaaac
acagtgaccc	cagagccctg
ggggacatgg	gctggagggc
gttccccgag	gaggaaggga
aggccaggag	aantgcgtgc
ggctatagtc	tctgaccctt
aggacctaga	ggcaccaagg
aggggctctg	tgtgcccccc
	60
	120
	180
	240

acgaggaana	ggcctgant	cctgggatca	nacacccctt	cacgtgtatc	cccacacaaa	300
tgcaagctca	ccaaggtccc	ctctcagtc	cttccctaca	ccctgaacgg	nactggccc	360
acacccaccc	agancancca	cccgccatgg	ggaatgtnt	caaggaatcg	cngggcaacg	420
tggactctng	tccnnaagg	gggcagaatc	tccaatagan	gganngaacc	cttgctnana	480
aaaaaaaaana	aaaaa					495

&lt;210&gt; 95

&lt;211&gt; 472

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(472)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 95

ggttacttgg	tttcattgcc	accacttagt	ggatgtcatt	tagaaccatt	ttgtctgctc	60
cctctggaag	ccttgccgag	agcggacttt	gtaattgttg	gagaataact	gctgaatttt	120
tagctgtttt	gagttgattc	gcaccactgc	accacaactc	aatatgaaaa	ctatttnact	180
tatttattat	cttgtgaaaa	gtatacaatg	aaaattttgt	tcatactgta	tttatcaagt	240
atgatgaaaa	gcaatagata	tatatctctt	tattatgttn	aattatgatt	gccattatta	300
atcggcaaaa	tgtggagtgt	atgttctttt	cacagtaata	tatgcctttt	gtaacttcac	360
ttggttat	tattgtaaat	gaattacaaa	attcttaatt	taagaaaatg	gtangttata	420
tttanttcan	taatttcttt	ccttgtttac	gttaattttg	aaaagaatgc	at	472

&lt;210&gt; 96

&lt;211&gt; 476

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(476)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 96

ctgaagcatt	tcttcaaact	tntctacttt	tgtcattgat	acctgtagta	agttgacaat	60
gtgggtgaaat	ttcaaaaatta	tatgtaactt	ctactagtgt	tactttctcc	cccaagtctt	120
ttttaactca	tgattttttac	acacacaatc	cagaacttat	tatatagcct	ctaagtcttt	180
attcttcaca	gtagatgatg	aaagagtcct	ccagtgtctt	gngcanaatg	ttctagntat	240
agctggatac	atacngtggg	agttctataa	actcatacct	cagtgggact	naaccaaaat	300
tgtgttagtc	tcaattccta	ccacactgag	ggagcctccc	aaatcactat	attcttatct	360
gcaggtagtc	ctccagaaaa	acngacaggg	caggcttgca	tgaaaaagtn	acatctgcgt	420
tacaaagtct	atcttctca	nangtctgtn	aaggaacaat	ttaatcttct	agcttt	476

&lt;210&gt; 97

&lt;211&gt; 479

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(479)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 97

actctttcta	atgctgatat	gatcttgagt	ataagaatgc	atatgtcact	agaatggata	60
aaataatgct	gcaaaacttaa	tgttcttatg	caaaatggaa	cgctaataaa	acacagctta	120
caatcgcaaa	tcaaaaactca	caagtgtctca	tctgtttag	atttagtgta	ataagactta	180
gattgtgctc	cttcgggat	gattgtttct	canatcttgg	gcaatnttcc	ttagtcaaat	240
caggctacta	gaattctgtt	attggatatn	tgagagcatg	aaatttttaa	naatacactt	300

gtgattatna	aattaatcac	aaattttcact	tatacctgct	atcagcagct	agaaaaacat	360
ntnnttttta	natcaaagta	ttttgtgttt	ggaantgttn	aaatgaaatc	tgaatgtggg	420
ttcnatctta	ttttttcccn	gacnactant	tnctttttta	gggnctattc	tganccatc	479

<210> 98  
 <211> 461  
 <212> DNA  
 <213> Homo sapien

<400> 98						
agtgacttgt	cctccaacaa	aaccccttga	tcaagtttgt	ggcactgaca	atcagaccta	60
tgctagtcc	tgatcatctat	tcgctactaa	atgcagactg	gaggggacca	aaaaggggca	120
tcaactccag	ctggattatt	ttggagcctg	caaattctatt	cctacttgta	cggactttga	180
agtgattcag	tttctctac	ggatgagaga	ctggctcaag	aatatcctca	tgcagcttta	240
tgaagccact	ctgaacacgc	tggttatcta	gatgagaaca	gagaaataaa	gtcagaaaaat	300
ttacctggag	aaaagaggct	ttggctgggg	accatcccat	tgaaccttct	cttaaggact	360
ttaagaaaaa	ctaccacatg	ttgtgtatcc	tggtgccggc	cgtttatgaa	ctgaccaccc	420
tttggaataa	tcttgacgct	cctgaacttg	ctcctctgcy	a		461

<210> 99  
 <211> 171  
 <212> DNA  
 <213> Homo sapien

<400> 99						
gtggccgcgc	gcaggtgttt	cctcgtaccg	cagggccccc	tcccttcccc	aggcgtccct	60
cggcgccctc	gcgggcccga	ggaggagcgg	ctggcggtg	gggggagtgt	gaccacccct	120
cggtgagaaa	agccttctct	agcgatctga	gaggcggtgc	ttgggggtac	c	171

<210> 100  
 <211> 269  
 <212> DNA  
 <213> Homo sapien

<400> 100						
cggccgcaag	tgcaactcca	gctggggccg	tgccgacgaa	gattctgcc	gcagttggtc	60
cgactgcgac	gacggcgggc	gcgacagtcg	caggtgcagc	gcgggcgcct	gggtcttgc	120
aaggctgagc	tgacgccgca	gaggtcgtgt	cacgtcccac	gaccttgacg	ccgtcgggga	180
cagccggaac	agagcccggg	gaagcgggag	gcctcgggga	gcccctcggg	aaggcgggcc	240
cgagagatac	gcaggtgcag	gtggccgc				269

<210> 101  
 <211> 405  
 <212> DNA  
 <213> Homo sapien

<400> 101						
tttttttttt	ttttggaatc	tactgcgagc	acagcaggtc	agcaacaagt	ttattttgca	60
gctagcaagg	taacagggtg	gggcatgggt	acatgttcag	gtcaacttcc	tttgtcgtgg	120
ttgattgggt	tgtctttatg	ggggcggggt	ggggtagggg	aaacgaagca	aataacatgg	180
agtgggtgca	ccctccctgt	agaacctggt	tacaaagctt	ggggcagttc	acctggctg	240
tgaccgtcat	tttcttgaca	tcaatgttat	tagaagtcag	gatattcttt	agagagtcca	300
ctgttctgga	gggagattag	ggtttcttgc	caaattccac	aaaatccact	gaaaaagttg	360
gatgatcagt	acgaataccg	aggcatattc	tcatatcggt	ggcca		405

<210> 102  
 <211> 470  
 <212> DNA  
 <213> Homo sapien

<400> 102						
tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	60

ggcacttaat	ccattttttat	ttcaaaatgt	ctacaaatth	aatcccatta	tacgggtattt	120
tcaaaatcta	aattattcaa	attagccaaa	tccttaccaa	ataataccca	aaaatcaaaa	180
atatacttct	ttcagcaaac	ttgttacata	aattaaaaaa	atatatacgg	ctgggtgtttt	240
caaagtacaa	ttatcttaac	actgcaaaaca	ttttaaggaa	ctaaaaataaa	aaaaaacact	300
ccgcaaagggt	taaaggggaac	aacaaattct	tttacaacac	cattataaaa	atcatatctc	360
aaatcttagg	ggaatatata	cttcacacgg	gatcttaact	tttactcact	ttgtttattt	420
ttttaaacca	ttgtttgggc	ccaacacaat	ggaatccccc	ctggactagt		470

<210> 103  
 <211> 581  
 <212> DNA  
 <213> Homo sapien

<400> 103						
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 <212> DNA  
 <213> Homo sapien

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 <212> DNA  
 <213> Homo sapien

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<210> 106  
 <211> 473  
 <212> DNA  
 <213> Homo sapien

&lt;400&gt; 106

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&lt;210&gt; 107

&lt;211&gt; 1621

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 107

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a

1621

&lt;210&gt; 108

&lt;211&gt; 382

&lt;212&gt; PRT

&lt;213&gt; Homo sapien

&lt;400&gt; 108

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			20					25					30		
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			35				40					45			
Gly	Lys	Arg	Ser	Leu	Val	Leu	Asp	Leu	Lys	Gln	Pro	Arg	Gly	Ala	Ala
	50					55					60				
Val	Leu	Arg	Arg	Leu	Cys	Lys	Arg	Ser	Asp	Val	Leu	Leu	Glu	Pro	Phe
65					70					75					80

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 <211> 3410  
 <212> DNA  
 <213> Homo sapien

<400> 110

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<210> 111
<211> 1289
<212> DNA
<213> Homo sapien

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<210> 112
<211> 315
<212> PRT
<213> Homo sapien

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<400> 112
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Leu Gly Pro Lys Ile Val Ile Val Ser Lys Met Met Lys Asp Val Phe
20      25      30
Phe Phe Leu Phe Phe Leu Gly Val Trp Leu Val Ala Tyr Gly Val Ala
35      40      45
Thr Glu Gly Leu Leu Arg Pro Arg Asp Ser Asp Phe Pro Ser Ile Leu
50      55      60
Arg Arg Val Phe Tyr Arg Pro Tyr Leu Gln Ile Phe Gly Gln Ile Pro
65      70      75      80
Gln Glu Asp Met Asp Val Ala Leu Met Glu His Ser Asn Cys Ser Ser
85      90      95
Glu Pro Gly Phe Trp Ala His Pro Pro Gly Ala Gln Ala Gly Thr Cys
100     105     110
Val Ser Gln Tyr Ala Asn Trp Leu Val Val Leu Leu Leu Val Ile Phe

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115	120	125
Leu Leu Val Ala Asn Ile	Leu Leu Val Asn Leu	Leu Ile Ala Met Phe
130	135	140
Ser Tyr Thr Phe Gly Lys	Val Gln Gly Asn Ser	Asp Leu Tyr Trp Lys
145	150	155
Ala Gln Arg Tyr Arg	Leu Ile Arg Glu Phe	His Ser Arg Pro Ala Leu
165	170	175
Ala Pro Pro Phe Ile Val	Ile Ser His Leu Arg	Leu Leu Leu Arg Gln
180	185	190
Leu Cys Arg Arg Pro Arg	Ser Pro Gln Pro Ser	Ser Pro Ala Leu Glu
195	200	205
His Phe Arg Val Tyr Leu	Ser Lys Glu Ala Glu	Arg Lys Leu Leu Thr
210	215	220
Trp Glu Ser Val His Lys	Glu Asn Phe Leu Leu	Ala Arg Ala Arg Asp
225	230	235
Lys Arg Glu Ser Asp Ser	Glu Arg Leu Lys Arg	Thr Ser Gln Lys Val
245	250	255
Asp Leu Ala Leu Lys Gln	Leu Gly His Ile Arg	Glu Tyr Glu Gln Arg
260	265	270
Leu Lys Val Leu Glu Arg	Glu Val Gln Gln Cys	Ser Arg Val Leu Gly
275	280	285
Trp Val Ala Glu Ala Leu	Ser Arg Ser Ala Leu	Leu Pro Pro Gly Gly
290	295	300
Pro Pro Pro Pro Asp Leu	Pro Gly Ser Lys Asp	315
305	310	

<210> 113  
 <211> 553  
 <212> PRT  
 <213> Homo sapien

<400> 113
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Ala Ala Gly Ile Thr Tyr Val Pro Pro Leu Leu Leu Glu Val Gly Val
35 40 45
Glu Glu Lys Phe Met Thr Met Val Leu Gly Ile Gly Pro Val Leu Gly
50 55 60
Leu Val Cys Val Pro Leu Gly Ser Ala Ser Asp His Trp Arg Gly
65 70 75 80
Arg Tyr Gly Arg Arg Arg Pro Phe Ile Trp Ala Leu Ser Leu Gly Ile
85 90 95
Leu Leu Ser Leu Phe Leu Ile Pro Arg Ala Gly Trp Leu Ala Gly Leu
100 105 110
Leu Cys Pro Asp Pro Arg Pro Leu Glu Leu Ala Leu Leu Ile Leu Gly
115 120 125
Val Gly Leu Leu Asp Phe Cys Gly Gln Val Cys Phe Thr Pro Leu Glu
130 135 140
Ala Leu Leu Ser Asp Leu Phe Arg Asp Pro Asp His Cys Arg Gln Ala
145 150 155 160
Tyr Ser Val Tyr Ala Phe Met Ile Ser Leu Gly Gly Cys Leu Gly Tyr
165 170 175
Leu Leu Pro Ala Ile Asp Trp Asp Thr Ser Ala Leu Ala Pro Tyr Leu
180 185 190
Gly Thr Gln Glu Cys Leu Phe Gly Leu Leu Thr Leu Ile Phe Leu
195 200 205
Thr Cys Val Ala Ala Thr Leu Leu Val Ala Glu Glu Ala Ala Leu Gly
210 215 220
Pro Thr Glu Pro Ala Glu Gly Leu S r Ala Pro Ser Leu Ser Pro His
225 230 235 240

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Cys Cys Pro Cys Arg Ala Arg Leu Ala Phe Arg Asn Leu Gly Ala Leu  
 245 250 255  
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 260 265 270  
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 275 280 285  
 Thr Leu Phe Tyr Thr Asp Phe Val Gly Glu Gly Leu Tyr Gln Gly Val  
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 Thr Cys Leu Ser His Ser Val Ala Val Val Thr Ala Ser Ala Ala Leu  
 370 375 380  
 Thr Gly Phe Thr Phe Ser Ala Leu Gln Ile Leu Pro Tyr Thr Leu Ala  
 385 390 395 400  
 Ser Leu Tyr His Arg Glu Lys Gln Val Phe Leu Pro Lys Tyr Arg Gly  
 405 410 415  
 Asp Thr Gly Gly Ala Ser Ser Glu Asp Ser Leu Met Thr Ser Phe Leu  
 420 425 430  
 Pro Gly Pro Lys Pro Gly Ala Pro Phe Pro Asn Gly His Val Gly Ala  
 435 440 445  
 Gly Gly Ser Gly Leu Leu Pro Pro Pro Ala Leu Cys Gly Ala Ser  
 450 455 460  
 Ala Cys Asp Val Ser Val Arg Val Val Val Gly Glu Pro Thr Glu Ala  
 465 470 475 480  
 Arg Val Val Pro Gly Arg Gly Ile Cys Leu Asp Leu Ala Ile Leu Asp  
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 Ser Ala Phe Leu Leu Ser Gln Val Ala Pro Ser Leu Phe Met Gly Ser  
 500 505 510  
 Ile Val Gln Leu Ser Gln Ser Val Thr Ala Tyr Met Val Ser Ala Ala  
 515 520 525  
 Gly Leu Gly Leu Val Ala Ile Tyr Phe Ala Thr Gln Val Val Phe Asp  
 530 535 540  
 Lys Ser Asp Leu Ala Lys Tyr Ser Ala  
 545 550

<210> 114  
 <211> 241  
 <212> PRT  
 <213> Homo sapien

<400> 114  
 Met Gln Cys Phe Ser Phe Ile Lys Thr Met Met Ile Leu Phe Asn Leu  
 1 5 10 15  
 Leu Ile Phe Leu Cys Gly Ala Ala Leu Ala Val Gly Ile Trp Val  
 20 25 30  
 Ser Ile Asp Gly Ala Ser Phe Leu Lys Ile Phe Gly Pro Leu Ser Ser  
 35 40 45  
 Ser Ala Met Gln Phe Val Asn Val Gly Tyr Phe Leu Ile Ala Ala Gly  
 50 55 60  
 Val Val Val Phe Ala Leu Gly Phe Leu Gly Cys Tyr Gly Ala Lys Thr  
 65 70 75 80  
 Glu Ser Lys Cys Ala Leu Val Thr Phe Phe Phe Ile Leu Leu Leu Ile  
 85 90 95  
 Phe Ile Ala Glu Val Ala Ala Ala Val Ala Leu Val Tyr Thr Thr  
 100 105 110  
 Met Ala Glu His Phe Leu Thr Leu Val Val Pro Ala Ile Lys Lys

115	120	125
Asp Tyr Gly Ser Gln Glu Asp Phe Thr Gln Val Trp Asn Thr Thr Met		
130	135	140
Lys Gly Leu Lys Cys Cys Gly Phe Thr Asn Tyr Thr Asp Phe Glu Asp		
145	150	155
Ser Pro Tyr Phe Lys Glu Asn Ser Ala Phe Pro Pro Phe Cys Cys Asn		160
	165	170
Asp Asn Val Thr Asn Thr Ala Asn Glu Thr Cys Thr Lys Gln Lys Ala		175
	180	185
His Asp Gln Lys Val Glu Gly Cys Phe Asn Gln Leu Leu Tyr Asp Ile		190
	195	200
Arg Thr Asn Ala Val Thr Val Gly Gly Val Ala Ala Gly Ile Gly Gly		205
	210	215
Leu Glu Leu Ala Ala Met Ile Val Ser Met Tyr Leu Tyr Cys Asn Leu		220
225	230	235
Gln		240

<210> 115  
 <211> 366  
 <212> DNA  
 <213> Homo sapien

<400> 115	
gctctttctc tccctcctc tgaatttaat tctttcaact tgcaatttgc aaggattaca	60
catttcactg tgaagtatat tgtgttgcaa aaaaaaaaaa gtgtctttgt ttaaaattac	120
ttggtttgtg aatccatctt gctttttccc cattggaact agtcattaac ccatctctga	180
actggtagaa aaacatctga agagctagtc tatcagcatc tgacaggtga attggatggt	240
tctcagaacc atttcaccca gacagcctgt ttctatcctg tttataaat tagtttgggt	300
tctctacatg cataacaaac cctgctccaa tctgtcacat aaaagtctgt gacttgaagt	360
ttagtc	366

<210> 116  
 <211> 282  
 <212> DNA  
 <213> Homo sapien

<220>	
<221> misc_feature	
<222> (1)...(282)	
<223> n = A,T,C or G	
<400> 116	
acaaagatga accatttcct atattatagc aaaatttaaaa tctaccgta ttctaattatt	60
gagaaatgag atnaaacaca atnttataaa gtctacttag agaagatcaa gtgacctcaa	120
agactttact attttcatat tttaagacac atgattttatc ctatttttagt aacctgggtc	180
atacggttaaa caaaggataa tgtgaacagc agagaggatt tgttggcaga aaatctatgt	240
tcaatctnga actatctana tcacagacat ttctattcct tt	282

<210> 117  
 <211> 305  
 <212> DNA  
 <213> Homo sapien

<220>	
<221> misc_feature	
<222> (1)...(305)	
<223> n = A,T,C or G	
<400> 117	
acacatgtcg cttcactgcc ttcttagatg cttctgggtca acatanagga acagggacca	60
tattttatcct cctccttgaa acaattgcaa aataanacaa aatatatgaa acaattgcaa	120

aataaggcaa aatatatgaa acaacaggtc tcgagatatt ggaaatcagt caatgaagga	180
tactgatccc tgatcactgt cctaattgcag gatgtgggaa acagatgagg tcacctctgt	240
gactgccccca gcttactgcc tgtagagagt ttctangctg cagttcagac agggagaaat	300
tggt	305

<210> 118  
 <211> 71  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(71)  
 <223> n = A,T,C or G

<400> 118	
accaagggtgt ntgaatctct gacgtgggga tctctgattc ccgcacaatc tgagtggaaa	60
aantcctggg t	71

<210> 119  
 <211> 212  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(212)  
 <223> n = A,T,C or G

<400> 119	
actccggttg gtgtcagcag cacgtggcat tgaacatngc aatgtggagc ccaaaccaca	60
gaaaatgggg tgaaattggc caactttcta tnaacttatg ttggcaantt tgccaccaac	120
agtaagctgg cccttctaataaaaagaaat tgaaagggtt ctcactaanc ggaattaant	180
aatggantca aganactccc aggcctcagc gt	212

<210> 120  
 <211> 90  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(90)  
 <223> n = A,T,C or G

<400> 120	
actcgttgca natcaggggc cccccagagt caccgttgca ggagtccttc tggctcttgcc	60
ctccgccggc gcagaacatg ctgggggtgg	90

<210> 121  
 <211> 218  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(218)  
 <223> n = A,T,C or G

<400> 121	
tgtancgtga anacgacaga naggggtgtc aaaaatggag aanccttgaa gtcattttga	60
gaataagatt tgctaaaaga tttggggcta aaacatgggt attgggagac atttctgaag	120

atatncangt aaattangga atgaattcat ggttcttttg ggaattcctt tacgatngcc 180  
 agcatanact tcatgtgggg atancagcta cccttgta 218

<210> 122  
 <211> 171  
 <212> DNA  
 <213> Homo sapien

<400> 122  
 taggggtgta tgcaactgta aggacaaaaa ttgagactca actggcttaa ccaataaagg 60  
 catttgtag ctcattggaac aggaagtcgg atggtggggc atcttcagtg ctgcatgagt 120  
 caccaccccg gcgggggtcat ctgtgccaca ggtccctgtt gacagtgcgg t 171

<210> 123  
 <211> 76  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(76)  
 <223> n = A,T,C or G

<400> 123  
 tgtagcgtga agacnacaga atggtgtgtg ctgtgctatc caggaacaca tttattatca 60  
 ttatcaanta ttgtgt 76

<210> 124  
 <211> 131  
 <212> DNA  
 <213> Homo sapien

<400> 124  
 acctttcccc aaggccaatg tcctgtgtgc taactggccg gctgcaggac agctgcaatt 60  
 caatgtgctg ggtcatatgg aggggaggag actctaaaaat agccaatttt attctcttgg 120  
 ttaagatttg t 131

<210> 125  
 <211> 432  
 <212> DNA  
 <213> Homo sapien

<400> 125  
 actttatcta ctggctatga aatagatggt ggaaaattgc gttaccaact ataccactgg 60  
 cttgaaaaag aggtgatagc tcttcagagg acttgtgact ttgctcaga tgctgaagaa 120  
 ctacagtctg catttggcag aaatgaagat gaatttgat taaatgagga tgctgaagat 180  
 ttgcctcacc aaacaaaagt gaaacaactg agagaaaatt ttcaggaaaa aagacagtgg 240  
 ctcttgaagt atcagtcact tttgagaatg tttcttagtt actgcatact tcatggatcc 300  
 catggtgggg gtcttgcac tgtaagaatg gaattgattt tgcttttgca agaattctcag 360  
 caggaaacat cagaaccact attttctagc cctctgtcag agcaaaccctc agtgcctctc 420  
 ctctttgctt gt 432

<210> 126  
 <211> 112  
 <212> DNA  
 <213> Homo sapien

<400> 126  
 acacaacttg aatagtaaaa tagaaaactga gctgaaattt ctaattcact ttctaaccat 60  
 agtaagaatg atatttcccc ccagggatca ccaaatttt ataaaaattt gt 112

<210> 127

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<211> 54
<212> DNA
<213> Homo sapien

<400> 127
accacgaaac cacaacaag atggaagcat caatccactt gccaaagcaca gcag      54

<210> 128
<211> 323
<212> DNA
<213> Homo sapien

<400> 128
acctcattag taattgtttt gttgtttcat ttttttctaa tgtctcccct ctaccagctc      60
acctgagata acagaatgaa aatggaagga cagccagatt tctcctttgc tctctgctca      120
ttctctctga agtctaggtt acccattttg gggacccatt ataggcaata aacacagttc      180
ccaaagcatt tggacagttt cttgtttgtg tttagaatgg ttttcctttt tcttagcctt      240
ttcctgcaaa aggctcactc agtcccttgc ttgctcagtg gactgggctc cccagggcct      300
aggctgcctt cttttccatg tcc                                          323

<210> 129
<211> 192
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(192)
<223> n = A,T,C or G

<400> 129
acatacatgt gtgtatatatt ttaaatatca cttttgtatc actctgactt tttagcatac      60
tgaaaaacaca ctaacataat ttntgtgaac catgatcaga tacaacccaa atcattcatc      120
tagcacattc atctgtgata naaagatagg tgagtttcat ttccttcacg ttggccaatg      180
gataaacaana gt                                          192

<210> 130
<211> 362
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(362)
<223> n = A,T,C or G

<400> 130
ccctttttta tggaatgagt agactgtatg tttgaanatt tanccacaac ctctttgaca      60
tataatgacg caacaaaaag gtgctgttta gtcctatggg tcagtttatg cccctgacaa      120
gtttccattg tgttttgccg atcttctggc taatcgtggg atcctccatg ttattagtaa      180
ttctgtattc cattttgtta acgcctggta gatgtaacct gctangaggc taactttata      240
cttattttaa agtctttatt ttgtggatc taaaatggca atttatgtgc agcactttat      300
tgcagcagga agcacgtgtg gggtgggtgt aaagctcttt gctaattcta aaaagtaatg      360
gg                                          362

<210> 131
<211> 332
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature

```

&lt;222&gt; (1)...(332)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 131

ctttttgaaa gatcgtgtcc actcctgtgg acatcttgtt ttaatggagt ttcccatgca	60
gtangactgg tatggttgca gctgtccaga taaaaacatt tgaagagctc caaaatgaga	120
gttctcccag gttcgccctg ctgctccaag tctcagcagc agcctctttt aggaggcatc	180
ttctgaacta gattaaggca gcttgtaa atctgatgtgat ttgggtttatt atccaactaa	240
cttccatctg ttatcactgg agaaagccca gactcccan gacnggtacg gattgtgggc	300
atanaaggat tgggtgaagc tggcgttgtg gt	332

&lt;210&gt; 132

&lt;211&gt; 322

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(322)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 132

acttttgcca ttttgtatat ataaacaatc ttgggacatt ctctgaaaa ctaggtgtcc	60
agtggctaag agaactcgat ttcaagcaat tctgaaagga aaaccagcat gacacagaat	120
ctcaaattcc caaacagggg ctctgtggga aaaatgaggg aggaccttg tatctcgggt	180
tttagcaagt taaatgaan atgacaggaa aggcttattt atcaacaaag agaagagttg	240
ggatgcttct aaaaaaaact ttggtagaga aaataggaat gctnaatcct aggggaagcct	300
gtaacaatct acaattggtc ca	322

&lt;210&gt; 133

&lt;211&gt; 278

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(278)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 133

acaagccttc acaagtttaa cttaaattggg attaatcttt ctgtanttat ctgcataatt	60
cttggttttc tttccatctg gctcctgggt tgacaatttg tggaaacaac tctattgcta	120
ctatttaaaa aaaatcacia atctttccct ttaagctatg ttnaattcaa actattcctg	180
ctattcctgt tttgtcaaag aaatttatatt tttcaaaata tgtntatttg tttgatgggt	240
cccacgaaac actaataaaa accacagaga ccagcctg	278

&lt;210&gt; 134

&lt;211&gt; 121

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(121)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 134

gtttanaaaa cttgttttagc tccatagagg aaagaatggt aaactttgta ttttaaaaca	60
tgattctctg aggttaaact tgggtttcaa atgttatatt tacttgtatt ttgcttttgg	120
t	121

&lt;210&gt; 135

<211> 350  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(350)  
 <223> n = A,T,C or G

<400> 135  
 acttanaacc atgcctagca catcagaatc cctcaaagaa catcagtata atcctataacc 60  
 atancaagtg gtgactgggt aagcgtgcga caaagggtcag ctggcacatt acttgtgtgc 120  
 aaacttgata cttttgttct aagtaggaac tagtatacag tncctaggan tggtagtcca 180  
 ggggtgcccc caactcctgc agccgctcct ctgtgccagn ccctgnaagg aactttcgct 240  
 ccacctcaat caagccctgg gccatgctac ctgcaattgg ctgaacaaac gtttgcgtgag 300  
 ttcccaagga tgcaaagcct ggtgctcaac tcttggggcg tcaactcagt 350

<210> 136  
 <211> 399  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(399)  
 <223> n = A,T,C or G

<400> 136  
 tgtaccgtga agacgacaga agttgcatgg cagggacagg gcagggccga ggccagggtt 60  
 gctgtgattg tatccgaata ntctcgtga gaaaagataa tgagatgacg tgagcagcct 120  
 gcagacttgt gtctgccttc aanaagccag acaggaaggc cctgcctgcc ttggctctga 180  
 cctggcggcc agccagccag ccacaggtgg gcttcttctt tttgtggtga caacnccaag 240  
 aaaactgcag agggccaggg tcaggtgtna gtgggtangt gaccataaaa caccaggtgc 300  
 tcccaggaac ccgggcaaag gccatcccca cctacagcca gcatgcccac tggcgtgatg 360  
 ggtgcagang gatgaagcag ccagntgttc tgctgtggt 399

<210> 137  
 <211> 165  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(165)  
 <223> n = A,T,C or G

<400> 137  
 actggtgtgg tngggggtga tgctggtggt anaagttgan gtgacttcan gatggtgtgt 60  
 ggaggaagtg tgtgaacgta gggatgtaga ngttttggcc gtgctaaatg agcttcggga 120  
 ttggctgggtc ccactggtgg tcactgtcat tggtgggggt cctgt 165

<210> 138  
 <211> 338  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(338)  
 <223> n = A,T,C or G

<400> 138



actcactgga	atgccacatt	cacaacagaa	tcagaggtct	gtgaaaacat	taatggctcc	60
ttaacttctc	cagtaagaat	cagggacttg	aaatggaaac	gttaacagcc	acatgcccac	120
tgctgggcag	tctcccatgc	cttccacagt	gaaagggctt	gagaaaaatc	acatccaatg	180
tcatgtgttt	ccagccacac	caaaaggtgc	ttgggggtgga	gggctggggg	catananggt	240
cangcctcag	gaagcctcaa	gttccattca	gctttgccac	tgtacattcc	ccatntttta	300
aaaaactgat	gccttttttt	tttttttttg	taaaattc			338

<210> 139  
 <211> 382  
 <212> DNA  
 <213> Homo sapien

gggaatcttg	gtttttggca	tctggtttgc	ctatagccga	ggccactttg	acagaacaaa	60
gaaagggact	tcgagtaaga	aggtgattta	cagccagcct	agtgcccgaa	gtgaaggaga	120
attcaaacag	acctcgtcat	tcctgggtg	agcctggtcg	gtcaccgcc	tatcatctgc	180
atttgcctta	ctcaggtgct	accggactct	ggcccctgat	gtctgtagtt	tcacaggatg	240
ccttatttgt	cttctacacc	ccacagggcc	ccctacttct	tcggatgtgt	ttttaataat	300
gtcagctatg	tgccccatcc	tccttcatgc	cctccctccc	tttctacca	ctgctgagtg	360
gcctggaact	tgtttaaagt	gt				382

<210> 140  
 <211> 200  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(200)  
 <223> n = A,T,C or G

accaaanctt	ctttctgttg	tgttngattt	tactataggg	gtttngcttn	ttctaaanat	60
acttttcatt	taacancttt	tgtaagtgt	caggctgcac	tttgctccat	anaattattg	120
ttttcacatt	tcaacttgta	tgtgtttgtc	tcttanagca	ttggtgaaat	cacatatttt	180
atattcagca	taaaggagaa					200

<210> 141  
 <211> 335  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(335)  
 <223> n = A,T,C or G

actttatttt	caaaacactc	atatgttgca	aaaaacacat	agaaaaataa	agtttggtgg	60
gggtgctgac	taaacttcaa	gtcacagact	tttatgtgac	agattggagc	agggtttgtt	120
atgcatgtag	agaaccctaa	ctaattttatt	aaacaggata	gaaacaggct	gtctgggtga	180
aatggttctg	agaaccatcc	aattcacctg	tcagatgctg	atanactagc	tcttcagatg	240
ttttctacc	agttcagaga	tnggttaatg	actanttcca	atggggaaaa	agcaagatgg	300
attcacaaac	caagtaattt	taaacaaaga	cactt			335

<210> 142  
 <211> 459  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature

&lt;222&gt; (1)...(459)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 142

accagggttaa	tattgccaca	tatatccttt	ccaattgcgg	gctaaacaga	cgtgtattta	60
gggttggtta	aagacaaccc	agcttaatat	caagagaaat	tgtgaccttt	catggagtat	120
ctgatggaga	aaacactgag	ttttgacaaa	tcttatttta	ttcagatagc	agtctgatca	180
cacatgggtcc	aacaacactc	aaataataaa	tcaaataatna	tcagatgtta	aagattggtc	240
ttcaaacatc	atagccaatg	atgccccgct	tgctataat	ctctccgaca	taaaaccaca	300
tcaacacctc	agtggccacc	aaaccattca	gcacagcttc	cttaactgtg	agctgtttga	360
agctaccagt	ctgagcacta	ttgactatnt	ttttcangct	ctgaatagct	ctagggatct	420
cagcanggggt	gggaggaacc	agctcaacct	tggcgtant			459

&lt;210&gt; 143

&lt;211&gt; 140

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 143

acatttcctt	ccaccaagtc	aggactcctg	gcttctgtgg	gagttcttat	cacctgaggg	60
aatccaaac	agtctctcct	agaaaggaat	agtgtcacca	acccacacca	tctccctgag	120
accatccgac	ttccctgtgt					140

&lt;210&gt; 144

&lt;211&gt; 164

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(164)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 144

acttcagtaa	caacatacaa	taacaacatt	aagtgtatat	tgccatcttt	gtcattttct	60
atctatacca	ctctcccttc	tgaaaacaan	aatcactanc	caatcactta	tacaaatttg	120
aggcaattaa	tccatatttg	ttttcaataa	ggaaaaaaag	atgt		164

&lt;210&gt; 145

&lt;211&gt; 303

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(303)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 145

acgtagacca	tccaactttg	tatttgtaat	ggcaaacatc	cagnagcaat	tcctaaacaa	60
actggagggt	atttataccc	aattatccca	ttcattaaca	tgccctcctc	ctcaggctat	120
gcaggacagc	tatcataagt	cggcccaggc	atccagatac	taccatttgt	ataaacttca	180
gtaggggagt	ccatccaagt	gacagggtcta	atcaaaggag	gaaatggaac	ataagcccgag	240
tagtaaaatn	ttgcttagct	gaaacagcca	caaaagactt	accgccgtgg	tgattaccat	300
caa						303

&lt;210&gt; 146

&lt;211&gt; 327

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

<221> misc\_feature  
 <222> (1)...(327)  
 <223> n = A,T,C or G

<400> 146  
 actgcagctc aattagaagt ggtctctgac ttcatcanc ttctccctgg gctccatgac 60  
 actggcctgg agtgactcat tgctctgggt gggtgagaga gctcctttgc caacaggcct 120  
 ccaagtacagg gctgggattt gtttcctttc cacattctag caacaatatg ctggccactt 180  
 cctgaacagg gaggggtggga ggagccagca tggaacaagc tgccactttc taaagtagcc 240  
 agacttgccc ctgggcctgt cacacctact gatgaccttc tgtgcctgca ggatggaatg 300  
 taggggtgag ctgtgtgact ctatggt 327

<210> 147  
 <211> 173  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(173)  
 <223> n = A,T,C or G

<400> 147  
 acattgtttt tttagataa agcattgana gagctctcct taacgtgaca caatggaagg 60  
 actggaacac ataccacat ctttgttctg agggataatt ttctgataaa gtcttgctgt 120  
 atattcaagc acatatgtta tatattattc agttccatgt ttatagccta gtt 173

<210> 148  
 <211> 477  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(477)  
 <223> n = A,T,C or G

<400> 148  
 acaaccactt tatctcatcg aatttttaac ccaaactcac tcaactgtgcc tttctatcct 60  
 atgggatata ttatttgatg ctccatttca tcacacatat atgaataata cactcatact 120  
 gccctactac ctgctgcaat aatcacattc ccttcctgtc ctgaccctga agccattggg 180  
 gtggtcctag tggccatcag tccangcctg caccttgagc ccttgagctc cattgctcac 240  
 nccancccac ctacccgacc ccacccctctt acacagctac ctcttgctc tctaaccocca 300  
 tagattatnt ccaaattcag tcaattaagt tactattaac actctaccg acatgtccag 360  
 caccactggg aagccttctc cagccaacac acacacacac acacncacac acacacatat 420  
 ccaggcacag gctacctcat cttcacaatc accccttttaa ttaccatgct atggtgg 477

<210> 149  
 <211> 207  
 <212> DNA  
 <213> Homo sapien

<400> 149  
 acagttgtat tataatatca agaaataaac ttgcaatgag agcatttaag agggaagaac 60  
 taacgtatatt tagagagcca aggaagggtt ctgtgggggag tgggatgtaa ggtggggcct 120  
 gatgataaat aagagtcagc caggtaagtg ggtggtgtgg tatgggcaca gtgaagaaca 180  
 tttcaggcag agggaacagc agtgaaa 207

<210> 150  
 <211> 111  
 <212> DNA  
 <213> Homo sapien

50

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(111)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 150

accttgattt cattgctgct ctgatggaaa cccaactatc taatttagct aaaacatggg	60
cacttaaatg tggtcagtgt ttggacttgt taactantgg catctttggg t	111

&lt;210&gt; 151

&lt;211&gt; 196

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 151

agcgcggcag gtcatttga acattccaga tacctatcat tactcgatgc tgttgataac	60
agcaagatgg ctttgaactc agggtcacca ccagctattg gaccttacta tgaaaaccat	120
ggataccaac cggaaaaccc ctatcccgca cagcccaactg tggccccac tgtctacgag	180
gtgcatccgg ctcatg	196

&lt;210&gt; 152

&lt;211&gt; 132

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 152

acagcacttt cacatgtaag aaggagaaaa ttccctaaatg taggagaaaag ataacagaaac	60
cttcccccttt tcatctagtgt gtggaaacct gatgctttat gttgacagga atagaaccag	120
gagggagttt gt	132

&lt;210&gt; 153

&lt;211&gt; 285

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(285)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 153

acaanaccca nganaggcca ctggccgtgg tgtcatggcc tccaaacatg aaagtgtcag	60
cttctgctct tatgtcctca tctgacaact ctttaccatt tttatcctcg ctgagcagga	120
gcacatcaat aaagtccaaa gtcttggact tggccttggc ttggaggaag tcatcaacac	180
cctggctagt gaggggtgcgg cgccgctcct ggatgacggc atctgtgaag tctgtcacca	240
gtctgcaggc cctgtggaag cgccgtccac acggagtnag gaatt.	285

&lt;210&gt; 154

&lt;211&gt; 333

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 154

accacagtcc tgttgggcca gggcttcatg accctttctg tgaaaagcca tattatcacc	60
accccaaatt ttcccttaaa tatctttaac tgaaggggtc agcctcttga ctgcaaagac	120
cctaagccgg ttacacagct aactcccact ggccctgatt tgtgaaattg ctgctgcctg	180
attggcacag gagtccaagg tggtcagctc ccctcctcgg tggaaacgaga ctctgatttg	240
agtttcacaa attctcgggc cacctcgtca ttgctcctct gaaataaaat ccggagaaatg	300
gtcaggcctg tctcatccat atggatcttc cgg	333

&lt;210&gt; 155

<211> 308  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(308)  
 <223> n = A,T,C or G

<400> 155  
 actggaaata ataaaaccca catcacagtg ttgtgtcaaa gatcatcagg gcatggatgg 60  
 gaaagtgtt tgggaactgt aaagtgccta acacatgac gatgattttt gttataatat 120  
 ttgaatcacg gtgcatacaa actctcctgc ctgctcctcc tgggccccag cccagcccc 180  
 atcacagctc actgctctgt tcatccaggc ccagcatgta gtggctgatt cttcttggct 240  
 gcttttagcc tccanaagtt tctctgaagc caaccaaacc tctangtga aggcattgctg 300  
 gccctggt 308

<210> 156  
 <211> 295  
 <212> DNA  
 <213> Homo sapien

<400> 156  
 accttgctcg gtgcttgga catattagga actcaaaata tgagatgata acagtgccta 60  
 ttattgatta ctgagagaac tgtagacat ttagttgaag attttctaca caggaactga 120  
 gaataggaga ttatgtttgg ccctcatatt ctctcctatc ctcttgcct cattctatgt 180  
 ctaatatatt ctcaatcaaa taaggttagc ataatcagga aatcgaccaa ataccaatat 240  
 aaaaccagat gtctatcctt aagattttca aatagaaaac aaattaacag actat 295

<210> 157  
 <211> 126  
 <212> DNA  
 <213> Homo sapien

<400> 157  
 acaagtttaa atagtgtgt cactgtgcat gtgctgaaat gtgaaatcca ccacatttct 60  
 gaagagcaaa acaaattctg tcatgtaatc tctatcttgg gtcgtgggta tatctgtccc 120  
 cttagt 126

<210> 158  
 <211> 442  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(442)  
 <223> n = A,T,C or G

<400> 158  
 acccactggt cttggaaaca cccatcctta atacgatgat ttttctgtcg tgtgaaaatg 60  
 aanccagcag gctgccccta gtcagtcctt ccttccagag aaaaagagat ttgagaaagt 120  
 gcctgggtaa ttcaccatta atttccctcc ccaaactctc tgagtcttcc cttaatat 180  
 ctggtgggtc tgaccaaagc aggtcatggt ttgttgagca tttgggatcc cagtgaagta 240  
 natgtttgta gccttgcata ctttagccctt cccacgcaca aacggagtgg cagagtgggtg 300  
 ccaaccctgt tttcccagtc cacgtagaca gattcacagt gcggaattct ggaagctgga 360  
 nacagacggg ctctttgcag agccgggact ctgagangga catgagggcc tctgcctctg 420  
 tgttcattct ctgatgtcct gt 442

<210> 159  
 <211> 498  
 <212> DNA

<213> Homo sapien

<220>

<221> misc\_feature

<222> (1)...(498)

<223> n = A,T,C or G

<400> 159

acttccaggt	aacgttggtg	tttccgttga	gcctgaactg	atgggtgacg	ttgtagggtc	60
tccaacaaga	actgaggttg	cagagcgggt	aggggaagagt	gctgttccag	ttgcacctgg	120
gctgctgtgg	actgttggtg	attcctcact	acggcccaag	gttgtggaac	tggcanaaag	180
gtgtgttggt	gganttgagc	tcgggcggct	gtggtagggt	gtgggctctt	caacaggggc	240
tgctgtggtg	ccgggangtg	aangtggtgt	gtcacttgag	cttggccagc	tctggaaagt	300
antanattct	tcctgaaggc	cagcgcttgt	ggagctggca	ngggtcantg	ttgtgtgtaa	360
cgaaccagtg	ctgctgtggg	tgggtgtana	tcctccacaa	agcctgaagt	tatggtgtcn	420
tcaggtaana	atgtggtttc	agtgtccctg	ggcngctgtg	gaaggttgta	nattgtcacc	480
aagggaataa	gctgtggt					498

<210> 160

<211> 380

<212> DNA

<213> Homo sapien

<220>

<221> misc\_feature

<222> (1)...(380)

<223> n = A,T,C or G

<400> 160

acctgcatcc	agcttccctg	ccaaactcac	aaggagacat	caacctctag	acagggaaac	60
agcttcagga	tacttccagg	agacagagcc	accagcagca	aaacaaatat	tcccatgcct	120
ggagcatggc	atagaggaag	ctganaaatg	tggggtctga	ggaagccatt	tgagtctggc	180
cactagacat	ctcatcagcc	acttgtgtga	agagatgcc	catgacccca	gatgcctctc	240
ccacccttac	ctccatctca	cacacttgag	ctttccactc	tgtataattc	taacatcctg	300
gagaaaaatg	gcagtttgac	cgaacctgtt	cacaacggta	gaggctgatt	tctaacgaaa	360
cttgtagaat	gaagcctgga					380

<210> 161

<211> 114

<212> DNA

<213> Homo sapien

<400> 161

actccacatc	ccctctgagc	aggcggttgt	cggtcaaggt	gtatttggcc	ttgcctgtca	60
cactgtccac	tggcccctta	tccacttggt	gcttaatccc	tcgaaagagc	atgt	114

<210> 162

<211> 177

<212> DNA

<213> Homo sapien

<400> 162

actttctgaa	tcgaatcaaa	tgatacttag	tgtagtttta	atatcctcat	atatatcaaa	60
gttttactac	tctgataatt	ttgtaaacca	ggttaaccaga	acatccagtc	atacagcttt	120
tggtgatata	taacttggca	ataaccaggt	ctggtgatac	ataaaactac	tcactgt	177

<210> 163

<211> 137

<212> DNA

<213> Homo sapien

<220>

<221> misc\_feature  
 <222> (1)...(137)  
 <223> n = A,T,C or G

<400> 163

catttatata	gacaggcgtg	aagacattca	cgacaaaaac	gcgaaattct	atccccgtgac	60
canagaaggc	agctacggct	actcctacat	cctggcgtgg	gtggccttcg	cctgcacctt	120
catcagcggc	atgatgt					137

<210> 164  
 <211> 469  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(469)  
 <223> n = A,T,C or G

<400> 164

cttatcacaa	tgaatgttct	cctgggcagc	gttgtgatct	ttgccacctt	cgtgacttta	60
tgcaatgcat	catgctattt	cataccta	gagggagttc	caggagattc	aaccaggaaa	120
tgcatggatc	tcaaaggaaa	caaacaccca	ataaactcgg	agtggcagac	tgacaactgt	180
gagacatgca	cttgctacga	aacagaaatt	tcatgttgca	cccttgtttc	tacacctgtg	240
ggttatgaca	aagacaactg	caaagaatc	ttcaagaagg	aggactgcaa	gtatatcgtg	300
gtggagaaga	aggacccaaa	aaagacctgt	tctgtcagtg	aatggataat	ctaattgtgt	360
tctagtaggc	acagggtccc	caggccaggc	ctcattctcc	tctggcctct	aatagtcaat	420
gattgtgtag	ccatgcctat	cagtaaaaag	atntttgagc	aaacacttt		469

<210> 165  
 <211> 195  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(195)  
 <223> n = A,T,C or G

<400> 165

acagtttttt	atanatatcg	acattgccgg	cacttgtgtt	cagtttcata	aagctgggtg	60
atccgctgtc	atccactatt	ccttggctag	agtaaaaatt	attcttatag	cccatgtccc	120
tgcaggccgc	ccgcccgtag	ttctcgttcc	agtcgtcttg	gcacacaggg	tgccaggact	180
tcctctgaga	tgagt					195

<210> 166  
 <211> 383  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(383)  
 <223> n = A,T,C or G

<400> 166

acatcttagt	agtgtggcac	atcagggggc	catcagggtc	acagtcactc	atagcctcgc	60
cgagggtcga	gtccacacca	ccggtgtagg	tgtgctcaat	cttgggcttg	gcgcccacct	120
ttggagaagg	gatatgctgc	acacacatgt	ccacaaagcc	tgtgaactcg	ccaaagaatt	180
tttgacagacc	agcctgagca	aggggcggat	gttcagcttc	agctcctcct	tcgtcagggtg	240
gatgccaacc	tcgtctangg	tccgtgggaa	gctggtgtcc	acntcaccta	caacctgggc	300
gangatctta	taaagaggct	ccnagataaa	ctccacgaaa	cttctctggg	agctgctagt	360

nggggccttt ttggtgaact ttc

383

<210> 167  
 <211> 247  
 <212> DNA  
 <213> Homo sapien  
 <220>  
 <221> misc\_feature  
 <222> (1)...(247)  
 <223> n = A,T,C or G

<400> 167

acagagccag	accttggcca	taaatgaanc	agagattaag	actaaacccc	aagtcganat	60
tggagcagaa	actggagcaa	gaagtgggcc	tggggctgaa	gtagagacca	aggccactgc	120
tatanccata	cacagagcca	actctcaggc	caaggcnatg	gttggggcag	anccagagac	180
tcaatctgan	tccaaagtgg	tggctggaac	actggtcatg	acanaggcag	tgactctgac	240
tgangtc						247

<210> 168  
 <211> 273  
 <212> DNA  
 <213> Homo sapien  
 <220>  
 <221> misc\_feature  
 <222> (1)...(273)  
 <223> n = A,T,C or G

<400> 168

acttctaagt	tttctagaag	tggaaggatt	gtantcatcc	tgaaaatggg	tttacttcaa	60
aatccctcan	ccttggttctt	cacnactgtc	tatactgana	gtgtcatgtt	tccacaaagg	120
gctgacacct	gagcctgnat	tttactcat	ccctgagaag	ccctttccag	taggggtggc	180
aattcccaac	ttccttgcca	caagcttccc	aggctttctc	ccctggaaaa	ctccagcttg	240
agtcccagat	acactcatgg	gctgacctgg	gca			273

<210> 169  
 <211> 431  
 <212> DNA  
 <213> Homo sapien  
 <220>  
 <221> misc\_feature  
 <222> (1)...(431)  
 <223> n = A,T,C or G

<400> 169

acagccttg	cttccccaaa	ctccacagtc	tcagtgcaga	aagatcatct	tccagcagtc	60
agctcagacc	agggtcaaag	gatgtgacat	caacagtttc	tggtttcaga	acaggttcta	120
ctactgtcaa	atgaccccc	atacttcctc	aaaggctgtg	gtaagttttg	cacagggtgag	180
ggcagcagaa	aggggggtant	tactgatgga	caccatcttc	tctgtatact	ccacactgac	240
cttgccatgg	gcaaaggccc	ctaccacaaa	aacaatagga	tcactgctgg	gcaccagctc	300
acgcacatca	ctgacaaccg	ggatggaaaa	agaantgcca	actttcatac	atccaactgg	360
aaagtgatct	gatactggat	tcttaattac	cttcaaaagc	ttctgggggc	catcagctgc	420
tcgaacactg	a					431

<210> 170  
 <211> 266  
 <212> DNA  
 <213> Homo sapien

<220>



<221> misc feature  
 <222> (1)...(266)  
 <223> n = A,T,C or G

<400> 170  
 acctgtgggc tgggctgtta tgccctgtgcc ggctgtctgaa agggagttca gaggtggagc 60  
 tcaaggagct ctgcaggcat ttgccaanc ctctccanag canagggagc aacctacact 120  
 ccccgctaga aagacaccag attggagctcc tgggaggggg agttggggtg ggcatttgat 180  
 gtatacttgt cacctgaatg aangagccag agaggaanga gacgaanatg anattggcct 240  
 tcaaagctag gggctctggca ggtgga 266

<210> 171  
 <211> 1248  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc feature  
 <222> (1)...(1248)  
 <223> n = A,T,C or G

<400> 171  
 ggcagccaaa tcataaacgg cgaggactgc agccccgact cgcagccctg gcaggcggca 60  
 ctggtcatgg aaaacgaatt gttctgctcg ggctcctgg tgcacccgca gtgggtgctg 120  
 tcagccgcac actgtttcca gaagtgaagt cagagctcct acaccatcgg gctgggctg 180  
 cacagtcttg aggccgacca agagccaggg agccagatgg tggaggccag cctctccgta 240  
 cggcaccag agtacaacag acccttgctc gctaacgacc tcatgctcat caagtgggac 300  
 gaatccgtgt ccgagtctga caccatccgg agcatcagca ttgcttcgca gtgccctacc 360  
 gcggggaact cttgcctcgt ttctggctgg ggtctgctgg cgaacggcag aatgcctacc 420  
 gtgctgcagt gcgtgaacgt gtcggtgggt tctgaggagg tctgcagtaa gctctatgac 480  
 ccgctgtacc accccagcat gttctgcgcc ggccggaggc aagaccagaa ggactcctgc 540  
 aacggtgact ctggggggcc cctgatctgc aacgggtact tgcagggcct tgtgtctttc 600  
 ggaaaagccc cgtgtggcca agttggcgtg ccagggtgtc acaccaacct ctgcaaattc 660  
 actgagtggga tagagaaaac cgtccaggcc agttaactct ggggactggg aacctatgaa 720  
 attgaccccc aaatacatcc tgcggaagga attcaggaat atctgttccc agccctcct 780  
 ccctcaggcc caggagtcca ggccccccag ccctcctccc tcaaaccaag ggtacagatc 840  
 cccagccctc cctccctcag acccaggagt ccagaccccc cagccctccc tccctcagac 900  
 ccaggagtcc agccctcct ccctcagacc caggagtcca gacccccag cccctcctcc 960  
 ctcagaccca ggggtccagg cccccaaccc ctccctccctc agactcagag gtccaagccc 1020  
 ccaaccntc attccccaga cccagaggtc caggtcccag cccctcntcc ctcagaccca 1080  
 gcggtccaat gccacctaga ctntccctg acacagtgcc cccttggtgg acgttgaccc 1140  
 aaccttacca gttggttttt catTTTTngt ccctttcccc tagatccaga aataaagttt 1200  
 aagagaagng caaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaa 1248

<210> 172  
 <211> 159  
 <212> PRT  
 <213> Homo sapien

<220>  
 <221> VARIANT  
 <222> (1)...(159)  
 <223> Xaa = Any Amino Acid

<400> 172  
 Met Val Glu Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Pro  
 1 5 10 15  
 Leu Leu Ala Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser  
 20 25 30  
 Glu Ser Asp Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr  
 35 40 45  
 Ala Gly Asn Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Gly

56

50						55						60					
Arg	Met	Pro	Thr	Val	Leu	Gln	Cys	Val	Asn	Val	Ser	Val	Val	Ser	Glu		
65					70					75					80		
Glu	Val	Cys	Ser	Lys	Leu	Tyr	Asp	Pro	Leu	Tyr	His	Pro	Ser	Met	Phe		
				85					90					95			
Cys	Ala	Gly	Gly	Gln	Xaa	Gln	Xaa	Asp	Ser	Cys	Asn	Gly	Asp	Ser			
			100				105					110					
Gly	Gly	Pro	Leu	Ile	Cys	Asn	Gly	Tyr	Leu	Gln	Gly	Leu	Val	Ser	Phe		
		115				120					125						
Gly	Lys	Ala	Pro	Cys	Gly	Gln	Val	Gly	Val	Pro	Gly	Val	Tyr	Thr	Asn		
	130				135						140						
Leu	Cys	Lys	Phe	Thr	Glu	Trp	Ile	Glu	Lys	Thr	Val	Gln	Ala	Ser			
145					150					155							

<210> 173  
 <211> 1265  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(1265)  
 <223> n = A,T,C or G

<400> 173

ggcagccccgc	actcgcagcc	ctggcaggcg	gcactgggtca	tggaaaacga	attgtttctgc	60
tccggcgctcc	tggtgcatcc	gcagtgggtg	ctgtcagccg	cacactgttt	ccagaactcc	120
tacaccatcg	ggctgggcct	gcacagtctt	gaggccgacc	aagagccagg	gagccagatg	180
gtggaggcca	gcctctccgt	acggcaccca	gagtacaaca	gacccttgct	cgctaacgac	240
ctcatgtcca	tcaagttgga	cgaatccgtg	tccgagtctg	acaccatccg	gagcatcagc	300
attgcttcgc	agtgccttac	cgcggggaac	tcttgccctg	tttctggctg	gggtctgctg	360
gcgaacggtg	agctcacggg	tgtgtgtctg	ccctcttcaa	ggaggtcctc	tgccagctcg	420
cgggggctga	cccagagctc	tgcgtcccag	gcagaatgcc	taccgtgctg	cagtgcgtga	480
acgtgtcggg	ggtgtctgag	gaggtctgca	gtaagctcta	tgaccgcgtg	taccacccca	540
gcatgtttctg	cgccggcgga	gggcaagacc	agaaggactc	ctgcaacggg	gactctgggg	600
ggccccctgat	ctgcaacggg	tacttgacgg	gccttgtgtc	tttcggaaaa	gccccgtgtg	660
gccaagttgg	cgtgccaggt	gtctacacca	acctctgcaa	attcactgag	tgatagaga	720
aaaccgtcca	ggccagttaa	ctctggggac	tgggaaccca	tgaaattgac	ccccaatac	780
atcctgcgga	aggaattcag	gaatatctgt	tcccagcccc	tcctccctca	ggcccaggag	840
tccaggcccc	cagccctcc	tccctcaaac	caagggtaca	gatccccagc	ccctccctcc	900
tcagaccag	gagtcacag	ccccagcccc	ctcctccctc	agaccagga	gtccagcccc	960
tcctccntca	gacccaggag	tccagacccc	ccagccccctc	ctccctcaga	cccagggggt	1020
gaggccccca	accctcctc	cttcagagtc	agaggtccaa	gcccccaacc	cctcgttccc	1080
cagaccagga	ggttnaggtc	ccagccccctc	ttccttcaga	cccagnggtc	caatgccacc	1140
tagattttcc	ctgnacacag	tgcccccttg	tggnangttg	acccaacctt	accagttggg	1200
ttttcatttt	tngtcccttt	cccctagatc	cagaaataaa	gtttaagaga	ngngcaaaaa	1260
aaaaa						1265

<210> 174  
 <211> 1459  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(1459)  
 <223> n = A,T,C or G

<400> 174

ggtcagccgc	acactgtttc	cagaagtgag	tgcagagctc	ctacaccatc	gggctggggc	60
tgcacagtct	tgaggccgac	caagagccag	ggagccagat	ggtggaggcc	agcctctccg	120
tacggcacc	agagtacaac	agacccttgc	tcgctaacga	cctcatgtct	atcaagttgg	180

acgaatccgt	gtccgagtct	gacaccatcc	ggagcatcag	cattgcttcg	cagtgccta	240
ccgcgggaa	ctcttgctc	gtttctggct	gggtctgct	ggcgaacggt	gagctcacgg	300
gtgtgtgtct	gccctcttca	aggaggtcct	ctgccagtc	gcgggggctg	acccagagct	360
ctgcgtccca	ggcagaatgc	ctaccgtgct	gcagtgcgtg	aacgtgtcgg	tggtgtctga	420
ngaggtctgc	antaagctct	atgacccgct	gtaccacccc	ancatgttct	gcgcggcg	480
agggcaagac	cagaaggact	cctgcaacgt	gagagagggg	aaaggggagg	gcaggcgact	540
cagggaaagg	tggagaagg	ggagacagag	acacacaggg	ccgcatggcg	agatgcagag	600
atggagagac	acacagggag	acagtgacaa	ctagagagag	aaactgagag	aaacagagaa	660
ataaacacag	gaataaagag	aagcaaagga	agagagaaac	agaaacagac	atggggaggc	720
agaaacacac	acacatagaa	atgcagttga	ccttccaaca	gcatggggcc	tgagggcggt	780
gacctccacc	caatagaaaa	tectcttata	acttttgact	ccccaaaaac	ctgactagaa	840
atagcctact	gttgacgggg	agccttacca	ataacataaa	tagtcgattt	atgcatacgt	900
tttatgcatt	catgatatac	ctttgttgga	attttttgat	atttctaagc	tacacagttc	960
gtctgtgaat	ttttttaaat	tgttgcaact	ctcctaaaat	ttttctgatg	tgtttattga	1020
aaaaatccaa	gtataagtgg	acttgtgcat	tcaaaccagg	gttggtcaag	ggtcaactgt	1080
gtacccagag	ggaaacagtg	acacagattc	atagaggtga	aacacgaaga	gaaacaggaa	1140
aatcaagac	tctacaaaga	ggctgggcag	ggtggctcat	gcctgtaatc	ccagcacttt	1200
gggaggcgag	gcaggcagat	cacttgaggt	aaggagttca	agaccagcct	ggccaaaatg	1260
gtgaaatcct	gtctgtacta	aaaatacaaa	agttagctgg	atatggtggc	agggcctgt	1320
aatcccagct	acttgggagg	ctgaggcagg	agaattgctt	gaatatggga	ggcagaggtt	1380
gaagtgagtt	gagatcacac	cactatactc	cagctggggc	aacagagtaa	gactctgtct	1440
caaaaaaaaa	aaaaaaaaa					1459

&lt;210&gt; 175

&lt;211&gt; 1167

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(1167)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 175

gcgcagccct	ggcaggcggc	actgggtcatg	gaaaacgaat	tgttctgctc	gggcgtcctg	60
gtgcatccgc	agtgggtgct	gtcagccgca	cactgtttcc	agaactccta	caccatcggg	120
ctgggcctgc	acagtcttga	ggccgaccaa	gagccaggga	gccagatggt	ggaggccagc	180
ctctccgtac	ggcaccacaga	gtacaacaga	ctcttgctcg	ctaaccgacct	catgctcatc	240
aagttggacg	aatccgtgtc	cgagtctgac	accatccgga	gcatcagcat	tgcttcgcag	300
tgccctaccg	cggggaactc	ttgcctcgtn	tctggctggg	gtctgctggc	gaacggcaga	360
atgcctaccg	tgctgcactg	cgtgaacgtg	tgggtgggtg	ctgaggangt	ctgcagtaag	420
ctctatgacc	cgctgtacca	ccccagcatg	ttctgcgccg	gcggagggca	agaccagaag	480
gactcctgca	acgggtgactc	tggggggccc	ctgatctgca	acgggtactt	gcagggcctt	540
gtgtctttcg	gaaaagcccc	gtgtggccaa	cttggcggtg	cagggtgtcta	caccaacctc	600
tgcaaattca	ctgagtggat	agagaaaacc	gtccagncca	gttaactctg	gggactggga	660
acccatgaaa	ttgaccccca	aatacatcct	gcggaangaa	ttcaggaata	tctgttccca	720
gcccctcctc	cctcaggccc	aggagtccag	gccccagacc	cctcctccct	caaaccaagg	780
gtacagatcc	ccagcccctc	ctccctcaga	cccaggagtc	cagacccccc	agcccctcnt	840
ccntcagacc	caggagtcca	gcccctcctc	cntcagacgc	aggagtccag	accccccagc	900
ccntcntccg	tcagaccacg	gggtgcaggc	ccccaacccc	tcntccntca	gagtcagagg	960
tccaagcccc	caaccctcctg	ttccccagac	ccagaggtnc	aggtcccagc	ccctcctccc	1020
tcagaccacg	cgggtccaatg	ccacctagan	tntccctgta	cacagtgcgc	ccttgtggca	1080
ngttgaccca	accttaccag	ttggtttttc	attttttgct	cctttcccct	agatccagaa	1140
ataaagtnta	agagaagcgc	aaaaaaa				1167

&lt;210&gt; 176

&lt;211&gt; 205

&lt;212&gt; PRT

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; VARIANT

&lt;222&gt; (1)...(205)

&lt;223&gt; Xaa = Any Amino Acid

&lt;400&gt; 176

```

Met Glu Asn Glu Leu Phe Cys Ser Gly Val Leu Val His Pro Gln Trp
 1      5      10      15
Val Leu Ser Ala Ala His Cys Phe Gln Asn Ser Tyr Thr Ile Gly Leu
      20      25      30
Gly Leu His Ser Leu Glu Ala Asp Gln Glu Pro Gly Ser Gln Met Val
      35      40      45
Glu Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Leu Leu Leu
      50      55      60
Ala Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser Glu Ser
      65      70      75      80
Asp Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr Ala Gly
      85      90      95
Asn Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Gly Arg Met
      100      105      110
Pro Thr Val Leu His Cys Val Asn Val Ser Val Val Ser Glu Xaa Val
      115      120      125
Cys Ser Lys Leu Tyr Asp Pro Leu Tyr His Pro Ser Met Phe Cys Ala
      130      135      140
Gly Gly Gly Gln Asp Gln Lys Asp Ser Cys Asn Gly Asp Ser Gly Gly
      145      150      155      160
Pro Leu Ile Cys Asn Gly Tyr Leu Gln Gly Leu Val Ser Phe Gly Lys
      165      170      175
Ala Pro Cys Gly Gln Leu Gly Val Pro Gly Val Tyr Thr Asn Leu Cys
      180      185      190
Lys Phe Thr Glu Trp Ile Glu Lys Thr Val Gln Xaa Ser
      195      200      205

```

&lt;210&gt; 177

&lt;211&gt; 1119

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 177

```

gcgcactcgc agccctggca ggcggcactg gtcattgaaa acgaattggt ctgctcgggc      60
gtcctggtgc atccgcagtg ggtgctgtca gccgcacact gttccagaa ctcctacacc      120
atcgggctgg gcctgcacag tcttgaggcc gaccaagagc cagggagcca gatggtggag      180
gccagcctct ccgtacggca cccagagtag aacagaccct tgctcgctaa cgacctcatg      240
ctcatcaagt tggacgaatc cgtgtccgag tctgacacca tccggagcat cagcattgct      300
tcgcagtgcc ctaccgcggg gaactcttgc ctcgtttctg gctggggtct gctggcgaac      360
gatgctgtga ttgccatcca gtcccagact gtgggaggct gggagtgtga gaagctttcc      420
caaccctggc agggttgtac catttcggca acttccagtg caaggacgtc ctgctgcata      480
ctcactgggt gctcactact gctcactgca tcacccgga cactgtgatc aactagccag      540
caccatagtt ctccgaagtc agactatcat gattactgtg ttgactgtgc tgtctattgt      600
actaaccatg ccgatgttta ggtgaaatta gcgtcacttg gcctcaacca tcttggtatc      660
cagttatcct cactgaattg agatttcctg cttcagtgct agccattccc acataatttc      720
tgacctacag aggtgaggga tcatatagct cttcaaggat gctggtactc ccctcacaaa      780
ttcatttctc ctgttgtagt gaaagggtgc cctctggag cctcccaggg tgggtgtgca      840
ggtcacaatg atgaatgtat gatcgtgttc ccattaccca aagcctttaa atccctcatg      900
ctcagtacac cagggcaggt ctagcatttc ttcathtagt gtatgctgtc cattcatgca      960
accacctcag gactcctgga ttctctgact agttgagctc ctgcatgctg cctccttggg      1020
gaggtgaggg agagggccca tggttcaatg ggatctgtgc agttgtaaca cattaggtgc      1080
ttaataaaca gaagctgtga tgttaaaaaa aaaaaaaaaa      1119

```

&lt;210&gt; 178

&lt;211&gt; 164

&lt;212&gt; PRT

&lt;213&gt; Homo sapien

<220>  
 <221> VARIANT  
 <222> (1)...(164)  
 <223> Xaa = Any Amino Acid

<400> 178  
 Met Glu Asn Glu Leu Phe Cys Ser Gly Val Leu Val His Pro Gln Trp  
 1 5 10 15  
 Val Leu Ser Ala Ala His Cys Phe Gln Asn Ser Tyr Thr Ile Gly Leu  
 20 25 30  
 Gly Leu His Ser Leu Glu Ala Asp Gln Glu Pro Gly Ser Gln Met Val  
 35 40 45  
 Glu Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Pro Leu Leu  
 50 55 60  
 Ala Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser Glu Ser  
 65 70 75 80  
 Asp Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr Ala Gly  
 85 90 95  
 Asn Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Asp Ala Val  
 100 105 110  
 Ile Ala Ile Gln Ser Xaa Thr Val Gly Gly Trp Glu Cys Glu Lys Leu  
 115 120 125  
 Ser Gln Pro Trp Gln Gly Cys Thr Ile Ser Ala Thr Ser Ser Ala Arg  
 130 135 140  
 Thr Ser Cys Cys Ile Leu Thr Gly Cys Ser Leu Leu Leu Thr Ala Ser  
 145 150 155 160  
 Pro Gly Thr Leu

<210> 179  
 <211> 250  
 <212> DNA  
 <213> Homo sapien

<400> 179  
 ctggagtgcc ttggtgtttc aagcccctgc aggaagcaga atgcaccttc tgaggcacct 60  
 ccagctgccc ccggccgggg gatgcgaggc tcggagcacc cttgcccggc tgtgattgct 120  
 gccaggcact gttcatctca gcttttctgt ccctttgctc ccggcaagcg cttctgctga 180  
 aagttcatat ctggagcctg atgtcttaac gaataaaggt cccatgctcc acccgaaaaa 240  
 aaaaaaaaaa 250

<210> 180  
 <211> 202  
 <212> DNA  
 <213> Homo sapien

<400> 180  
 actagtcag tgtggtggaa ttccattgtg ttgggcccac cacaatggct acctttaaca 60  
 tcaccagac cccgcccctg cccgtgcccc acgtgctgc taacgacagt atgatgctta 120  
 ctctgctact cggaactat ttttatgtaa ttaatgtatg ctttcttggt tataaatgcc 180  
 tgatttaaaa aaaaaaaaaa aa 202

<210> 181  
 <211> 558  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(558)  
 <223> n = A,T,C or G

60

```

<400> 181
tccytttkt naggtttkkg agacamccck agacctwaan ctgtgtcaca gacttcyngg      60
aatgtttagg cagtgcctagt aatttcytcg taatgattct gttattactt tcctnattct      120
ttattcctct ttcttctgaa gattaatgaa gttgaaaatt gaggtggata aatacaaaaa      180
ggtagtgtga tagtataagt atctaagtgc agatgaaagt gtgttatata tatccattca      240
aaattatgca agtttagtaat tactcagggt taactaaatt actttaatat gctgttgaac      300
ctactctgtt ccttggctag aaaaaattat aaacaggact ttgttagttt gggaagccaa      360
attgataata ttctatgttc taaaagttgg gctatacata aattattaag aaatatggaw      420
ttttattccc aggaatatgg kgttcatttt atgaatatta cscrggatag awgtwtgagt      480
aaaaycagtt ttggtwaata ygtwaatatg tcmtaaataa acaakgcttt gacttatttc      540
caaaaaaaaa aaaaaaaaaa

```

```

<210> 182
<211> 479
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(479)
<223> n = A,T,C or G

```

```

<400> 182
acagggwttk grggatgcta agsccccrga rwtggtttga tccaaccctg gcttwttttc      60
agaggggaaa atggggccta gaagttacag mscatytagy tgggtgcgmg gaccccttg      120
cstcacacag astcccaggt agctgggact acaggcacac agtcactgaa gcaggccctg      180
ttwgcaattc acgttgccac ctccaactta aacattcttc atatgtgatg tccttagtca      240
ctaaggttaa actttccac ccagaaaagg caacttagat aaaatcttag agtactttca      300
tactmttcta agtcctcttc cagcctcact kkgagtcctm cytggggggt gataggaant      360
ntctcttggc tttctcaata aartctctat ycatctcatg ttttaatttg tacgcataa      420
awtgstgara aaattaaaat gttctggtty mactttaaaa aaaaaaaaaa aaaaaaaaaa      479

```

```

<210> 183
<211> 384
<212> DNA
<213> Homo sapien

```

```

<400> 183
aggcgggagc agaagctaaa gccaaagccc aagaagagtg gcagtgccag cactgggtgcc      60
agtaccagta ccaataacag tgccagtgcc agtgccagca ccagtgggtg cttcagtgct      120
ggtgccagcc tgaccgccac tctcacattt gggctcttcg ctggccttgg tggagctggt      180
gccagcacca gtggcagctc tgggtgcctgt ggtttctcct acaagtgaga ttttagatat      240
tgtaaatcct gccagtcttt ctcttcaagc cagggtgcat cctcagaaac ctactcaaca      300
cagcactcta ggcagccact atcaatcaat tgaagttgac actctgcatt aratctattt      360
gccatttcaa aaaaaaaaaa aaaa

```

```

<210> 184
<211> 496
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(496)
<223> n = A,T,C or G

```

```

<400> 184
accgaattgg gaccgctggc ttataagcga tcatgtyynt ccrgtatcac ctcaacgagc      60
aggagatcgt agtctatacg ctgaagaaat ttgacccgat gggacaacag acctgctcag      120
cccatcctgc tcggttctcc ccagatgaca aatactctsg acaccgaatc accatcaaga      180
aacgcttcaa ggtgctcatg accagcaac cgcgcctcgt cctctgaggg tcccttaaac      240
tgatgtcttt tctgccacct gttaccacct ggagactccg taaccaaact cttcggaactg      300

```

tgagccctga	tgcctttttg	ccagccatac	tctttggcat	ccagtctctc	gtggcgattg	360
attatgcttg	tgtgaggcaa	tcatggtggc	atcaccata	aagggaacac	atttgacttt	420
tttttctcat	attttaaat	actacmagaw	tattwmagaw	waaatgawtt	gaaaaactst	480
taaaaaaaaa	aaaaaa					496

&lt;210&gt; 185

&lt;211&gt; 384

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 185

gctggtagcc	tatggcgkkg	cccacggagg	ggctcctgag	gccacggrac	agtgacttcc	60
caagtatcyt	gcgcsgcgtc	ttctaccgtc	cctacctgca	gatcttcggg	cagattcccc	120
aggaggacat	ggacgtggcc	ctcatggagc	acagcaactg	ytctgcggag	cccggcttct	180
gggcacaccc	tcctggggcc	caggcgggca	cctgcgtctc	ccagtatgcc	aactggcttg	240
tggtgctgct	cctcgtcctc	ttcctgctcg	tggccaacat	cctgctggtc	aacttgctca	300
ttgccatgtt	cagttacaca	ttcggcaaag	tacagggcaa	cagcgatctc	tactgggaag	360
gcgcagcgtt	accgcctcat	cggg				384

&lt;210&gt; 186

&lt;211&gt; 577

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(577)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 186

gagttagctc	ctccacaacc	ttgatgaggt	cgtctgcagt	ggcctctcgc	ttcataccgc	60
tnccatcgtc	atactgtagg	tttgccacca	cytcctggca	tcttggggcg	gcntaatatt	120
ccaggaaact	ctcaatcaag	tcaccgtcga	tgaacctgt	gggctgggtc	tgtcttccgc	180
tcggtgtgaa	aggatctccc	agaaggagt	ctcgatcttc	cccacacttt	tgatgacttt	240
attgagtcga	ttctgcatgt	ccagcaggag	ggtgtaccag	ctctctgaca	gtgagggtcac	300
cagccctatc	atgccgttga	mcgtgccgaa	garcaccgag	ccttggtgtg	gggkkgaa	360
ctcaccacga	ttctgcatta	ccagagagcc	gtggcaaaa	acattgacaa	actcgcccag	420
gtggaaaaa	amcamctcct	ggargtgctn	gccgctcctc	gtcmgttggt	ggcagcgctw	480
tccttttgac	acacaaacaa	gttaaaggca	ttttcagccc	ccagaaantt	gtcatcatcc	540
aagatntcgc	acagcactna	tccagttggg	attaaat			577

&lt;210&gt; 187

&lt;211&gt; 534

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(534)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 187

aacatcttcc	tgtataatgc	tgtgtaatat	cgatccgatn	ttgtctgstg	agaatycatw	60
actkggaaaa	gmaacattaa	agcctggaca	ctggatttaa	aattcacaat	atgcaacact	120
ttaaacagtg	tgtcaatctg	ctcccyynac	tttgtcatca	ccagtctggg	aakaagggtta	180
tgccctattc	acacctgtta	aaaggcgct	aagcattttt	gattcaacat	cttttttttt	240
gacacaagtc	cgaaaaaagc	aaaagtaaac	agttatyaat	ttgttagcca	attcactttc	300
ttcatgggac	agagccatyt	gatttaaaaa	gcaaattgca	taatattgag	cttygggagc	360
tgatatttga	gcgggaagag	agcctttcta	cttcaccaga	cacaactccc	tttcatattg	420
ggatgttnac	naaagtwatg	tctctwacag	atgggatgct	tttgtggcaa	ttctgttctg	480
aggatctccc	agtttattta	ccacttgcac	aagaaggcgt	tttcttctc	aggc	534

<210> 188  
 <211> 761  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(761)  
 <223> n = A,T,C or G

<400> 188  
 agaaaccagt atctctnaaa acaacctctc ataccttgtg gacctaattt tgtgtgcgtg 60  
 tgtgtgtgcg cgcataattat atagacaggc acatcttttt tacttttgta aaagcttatg 120  
 cctcttttgg atctatatct gtgaaagttt taatgatctg ccataatgtc ttggggacct 180  
 ttgtcttctg tgtaaatggt actagagaaa acacctatnt tatgagtcaa tctagttngt 240  
 tttattcgac atgaaggaaa ttccagatn acaacactna caaactctcc ctkgackarg 300  
 ggggacaaaag aaaagcaaaa ctgamcataa raaacaatwa cctgggtgaga arttgcataa 360  
 acagaaatwr ggtagtatat tgaarnacag catcattaaa rmgttwtktt wttctccctt 420  
 gcaaaaaaca tgtacngact tcccgttgag taatgccaaag ttgttttttt tatnataaaa 480  
 cttgcccttc attacatggt tnaaagtggg gtgggtggcc aaaatattga aatgatggaa 540  
 ctgactgata aagctgtaca aataagcagt gtgcctaaca agcaacacag taatgttgac 600  
 atgcttaatt cacaatgct aatttcatta taaatgtttg ctaaaataca ctttgaacta 660  
 tttttctgtn ttccagagc tgagatntta gattttatgt agtatnaagt gaaaaantac 720  
 gaaaataata acattgaaga aaaananaaa aaanaaaaaa a 761

<210> 189  
 <211> 482  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(482)  
 <223> n = A,T,C or G

<400> 189  
 tttttttttt ttgtccgatn ctactatttt attgcaggan gtgggggtgt atgcaccgca 60  
 caccggggct atnagaagca agaaggaagg agggagggca cagccccttg ctgagcaaca 120  
 aagccgcctg ctgccttctc tgtctgtctc ctgggtgcagg cacatgggga gaccttcccc 180  
 aaggcagggg ccaccagtcg aggggtggga atacaggggg tgggangtgt gcataagaag 240  
 tgataggcac agggcaccgg gtacagaccc ctcggtcctt gacaggtnga tttcgaccag 300  
 gtcattgtgc cctgcccagg cacagcgtn atctggaaaa gacagaatgc tttccttttc 360  
 aaatttggt ngctcatngaa ngggcanttt tccaanttng gctnggtctt ggtacncttg 420  
 gttcggccca gctcncgct caaaaantat tcaccnctt ccnaattgct tgcnggnccc 480  
 cc 482

<210> 190  
 <211> 471  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(471)  
 <223> n = A,T,C or G

<400> 190  
 tttttttttt ttttaaaaca gtttttcaca acaaaattta ttagaagaat agtggttttg 60  
 aaaactctcg catccagtga gaactaccat acaccacatt acagctngga atgtntctca 120  
 aatgtctggg caaatgatac aatggaaacca ttcaatctta cacatgcacg aaagaacaag 180  
 cgcttttgac atacaatgca caaaaaaaaa aggggggggg gaccacatgg attaaaaattt 240  
 taagtactca tcacatacat taagacacag ttctagtcca gtcnaaaatc agaactgcnt 300



tgaaaaattt	catgtatgca	atccaaccaa	agaacttnat	tggtgatcat	gantncteta	360
ctacatcnac	cttgatcatt	gccaggaacn	aaaagttnaa	ancacncngt	acaaaaanaa	420
tctgtaattn	anttcaacct	ccgtacngaa	aaatnttnnt	tatacactcc	c	471

&lt;210&gt; 191

&lt;211&gt; 402

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(402)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 191

gagggattga	aggtctgttc	tastgtcggm	ctgttcagcc	accaaactcta	acaagttgct	60
gtcttccact	cactgtctgt	aagcttttta	accagacwg	tatcttcata	aatagaacaa	120
attcttcacc	agtcacatct	tctaggacct	ttttggattc	agttagtata	agctcttcca	180
cttcctttgt	taagacttca	tctggtaaag	tcttaagttt	tgtagaaagg	aattyaattg	240
ctcgttctct	aacaatgtcc	tctccttgaa	gtatttggct	gaacaaccca	cctaaagtcc	300
ctttgtgcat	ccatttttaa	tatacttaat	agggcattgk	tnactaggt	taaattctgc	360
aagagtcate	tgtctgcaaa	agttgcgtta	gtatatctgc	ca		402

&lt;210&gt; 192

&lt;211&gt; 601

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(601)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 192

gagctcggat	ccaataatct	ttgtctgagg	gcagcacaca	tatncagtgc	catgгнаact	60
ggtctacccc	acatgggagc	agcatgccgt	agntatataa	ggtcattccc	tgagtcagac	120
atgcytyttt	gaytaccgtg	tgccaagtgc	tggtgattct	yaacacacyt	ccatcccgyt	180
cttttgagg	aaaactggca	cttktctgga	actagcarga	catcacttac	aaattcacc	240
acgagacact	tgaaagggtg	aacaaagcga	ytcttgcat	gctttttgtc	cctccggcac	300
cagttgtcaa	tactaaccgg	ctggtttgcc	tccatcacat	ttgtgatctg	tagctctgga	360
tacatctcct	gacagtactg	aagaacttct	tcttttggtt	caaaagcarg	tcttggtgcc	420
tgttggatca	ggttcccat	tcccagtcyg	aatgttcaca	tggtcatatt	wacttccac	480
aaaacattgc	gatttgaggc	tcagcaacag	caaactctgt	tccggcattg	gctgcaagag	540
cctcgatgta	gccggccagc	gccaaggcag	gcgccgtgag	ccccaccagc	agcagaagca	600
g						601

&lt;210&gt; 193

&lt;211&gt; 608

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(608)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 193

atacagccca	natcccacca	cgaagatgcg	cttggtgact	gagaacctga	tgccggtcact	60
ggtcccgtg	tagccccagc	gactctccac	ctgctggaag	cggttgatgc	tgactctytt	120
cccaacgcag	gcagmagcgg	gscgggtcaa	tgaactccay	tcgtggcttg	gggtkgacgg	180
tkaagtgcag	gaagaggctg	accacctcgc	ggtccaccag	gatgcccag	tgtgcgggac	240
ctgcagcgaa	actcctcgat	ggtcatgagc	gggaagcgaa	tgaggccccag	ggccttgccc	300

```

agaaccttcc gectgttctc tggcgtcacc tgcagctgct gccgctgaca ctcggcctcg      360
gaccagcgga caaacggcrt tgaacagccg cacctcacgg atgcccagtg tgtcgcgctc      420
caggammgsc accagcgtgt ccagggtcaat gtcggtgaag ccctccgcgg gtrattggcgt      480
ctgcagtggt tttgtcgatg ttctccaggc acaggctggc cagctgcggg tcatcgaaga      540
gtcgcgccctg cgtgagcagc atgaaggcgt tgtcggctcg cagttcttct tcaggaactc      600
cacgcaat                                         608

```

```

<210> 194
<211> 392
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(392)
<223> n = A,T,C or G

```

```

<400> 194
gaacggctgg accttgccctc gcattgtgct tgctggcagg gaataccttg gcaagcagyt      60
ccagtcaggag cagccccaga ccgctgccgc ccgaagctaa gcctgcctct ggccttcccc      120
tccgcctcaa tgcagaacca gtagtgggag cactgtgttt agagttaaga gtgaacactg      180
tttgatttta cttgggaatt tcctctgtta tatagctttt cccaatgcta atttccaaac      240
aacaacaaca aaataacatg tttgcctgtt aagttgtata aaagtaggtg attctgtatt      300
taaagaaaat attactgtta catatactgc ttgcaatttc tgtatttatt gktnctstgg      360
aaataaatat agttattaaa ggttgtcant cc                                         392

```

```

<210> 195
<211> 502
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(502)
<223> n = A,T,C or G

```

```

<400> 195
ccsttkgagg ggtkaggkyc cagttyccga gtggaagaaa caggccagga gaagtgcgtg      60
ccgagctgag gcagatgttc ccacagtgc cccagagacc stgggstata gtytctgacc      120
cctcncaagg aaagaccacs ttctggggac atgggctgga gggcaggacc tagaggcacc      180
aagggaaggc cccattccgg ggstgttccc cgaggaggaa ggggaagggc tctgtgtgcc      240
ccccasgagg aagaggccct gagtccctggg atcagacacc ccttcacgtg tatccccaca      300
caaatgcaag ctaccaagg tcccctctca gtccccttc stacaccctg amcggccact      360
gscscacacc caccagagc acgccaccgc ccatggggar tgtgctcaag gartcgcnng      420
gcarcgtgga catctngtcc cagaagggg cagaatctcc aatagangga ctgarcmstt      480
gctnanaaaa aaaaaaaaaa aa                                         502

```

```

<210> 196
<211> 665
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(665)
<223> n = A,T,C or G

```

```

<400> 196
ggttacttgg tttcattgcc accacttagt ggatgtcatt tagaaccatt ttgtctgctc      60
cctctggaag ccttgccgag agcggacttt gtaattgttg gagaataact gctgaatttt      120
wagctgtttk gagttgatts gcaccactgc acccacaact tcaatatgaa aacyawttga      180
actwatttat tatcttgtga aaagtataac aatgaaaatt ttgttcatac tgtattkatc      240

```

```

aagtatgatg aaaagcaawa gatatatatt cttttattat gttaaattat gattgccatt 300
attaatcggc aaaatgtgga gtgtatgttc ttttcacagt aatatatgcc ttttgtaact 360
tcacttggtt atttttattgt aaatgartta caaaattcctt aattttaagar aatgggtatgt 420
watattttatt tcattaattt ctttcctkgt ttacgtwaat tttgaaaaga wtgcatgatt 480
tcttgacaga aatcgatcct gatgctgtgg aagtagtttg acccacatcc ctatgagttt 540
ttcttagaat gtataaagggt tgtagcccat cnaacttcaa agaaaaaaat gaccacatac 600
tttgcaatca ggctgaaatg tggcatgctn ttctaattcc aactttataa actagcaaan 660
aagtg 665

```

```

<210> 197
<211> 492
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(492)
<223> n = A,T,C or G

```

```

<400> 197
tttntttttt ttttttttgc aggaaggatt ccattttattg tggatgcatt ttcacaatat 60
atgttttattg gagcgatcca ttatcagtga aaagtatcaa gtgtttataa natttttagg 120
aaggcagatt cacagaacat gctngtcngc ttgcagtttt acctcgtana gatnacagag 180
aattatagtc naaccagtaa acnaggaatt tacttttcaa aagattaaat ccaaactgaa 240
caaaatttcta ccctgaaact tactccatcc aaatattgga ataanagtca gcagtgatac 300
attctcttct gaacttttaga ttttctagaa aaatatgtaa tagtgatcag gaagagctct 360
tgttcaaaaag tacaacnaag caatgttccc ttaccatagg ccttaattca aactttgatc 420
catttcactc ccatcacggg agtcaatgct acctgggaca cttgtatttt gttcatnctg 480
ancntggctt aa 492

```

```

<210> 198
<211> 478
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(478)
<223> n = A,T,C or G

```

```

<400> 198
tttnttttgn atttcantct gtannaanta ttttcattat gtttattana aaaatatnaa 60
tgtntccacn acaaatcatn ttacntnagt aagaggccan ctacattgta caacatacac 120
tgagtatatt ttgaaaagga caagttttaa gtanacncat attgccganc atancacatt 180
tatacatggc ttgattgata tttagcacag canaaactga gtgagttacc agaaanaaat 240
natatatgtc aatcngattt aagatacaaa acagatccta tggtagatan catcntgtag 300
gagttgtggc tttatgttta ctgaaagtca atgcagttcc tgtacaaaga gatggccgta 360
agcattctag tacctctact ccatggttta gaatcgtaca cttatgttta catatgtnta 420
gggtaagaat tgtgttaagt naanttatgg agaggtccan gagaaaaatt tgatncaa 478

```

```

<210> 199
<211> 482
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(482)
<223> n = A,T,C or G

```

```

<400> 199
agtgacttgt cctccaacaa aacccttga tcaagtttgt ggcactgaca atcagaccta 60

```



caacancnnc	nattataaaa	atcatatctc	aaatcttagg	ggaatatata	cttcacacng	420
ggatcttaac	ttttactnca	ctttgtttat	ttttttanaa	ccattgtntt	gggcccaaca	480
caatggnaat	ncncncnc	tggaactagt				509

<210> 203  
 <211> 583  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(583)  
 <223> n = A,T,C or G

<400> 203						
tttttttttt	ttttttttga	ccccctctt	ataaaaaaca	agttaccatt	ttattttact	60
tacacatatt	tattttataa	ttggtattag	atattcaaaa	ggcagctttt	aaaatcaaac	120
taaatggaaa	ctgccttaga	tacataattc	ttaggaatta	gcttaaaaac	tgccataaagt	180
gaaaatcttc	tctagctctt	ttgactgtaa	atttttgact	cttgtaaaaac	atccaaattc	240
atttttcttg	tctttaaaaa	tatctaattc	ttccattttt	tccctattcc	aagtcaattt	300
gcttctctag	cctcatttcc	tagctcttat	ctactattag	taagtggcct	ttttcctaaa	360
agggaaaaca	ggaagagana	atggcacaca	aaacaaacat	tttatattca	tatttctacc	420
tacgttaata	aaatagcatt	ttgtgaagcc	agctcaaaaag	aaggcttaga	tccttttatg	480
tccatttttag	tcactaaaacg	atatcnaaag	tgccagaatg	caaaaagggtt	gtgaacattt	540
attcaaaagc	taatataaga	tatttcacat	actcatcttt	ctg		583

<210> 204  
 <211> 589  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(589)  
 <223> n = A,T,C or G

<400> 204						
ttttttttnt	tttttttttt	ttttttntct	ttcttttttt	ttganaatga	ggatcgagtt	60
tttcaactct	tagatagggc	atgaagaaaa	ctcatctttc	cagcttttaa	ataacaatca	120
aatctcttat	gctatatcat	attttaagtt	aaactaatga	gtcactggct	tatcttctcc	180
tgaaggaaa	ctgttcattc	ttctcattca	tatagttata	tcaagtacta	ccttgcatat	240
tgagagggtt	ttcttctcta	tttacacata	tattttccatg	tgaatttgta	tcaaaccttt	300
attttcatgc	aaactagaaa	ataatgtntt	cttttgcata	agagaagaga	acaatatnag	360
cattacaaaa	ctgctcaaat	tgtttggtta	gnntatccat	tataattagt	tnggcaggag	420
ctaatacaaa	tcacatttac	ngacnagcaa	taataaaaact	gaagtaccag	ttaaatatcc	480
aaaataatta	aaggaacatt	tttagcctgg	gtataattag	ctaattcact	ttacaagcat	540
ttattnagaa	tgaattcaca	tgttattatt	ccntagccca	acacaatgg		589

<210> 205  
 <211> 545  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(545)  
 <223> n = A,T,C or G

<400> 205						
ttttnttttt	ttttttcagt	aataatcaga	acaatattta	tttttatatt	taaaattcat	60
agaaaagtgc	cttacattta	ataaaaagttt	gtttctcaaa	gtgatcagag	gaattagata	120
tngtcttgaa	caccaatatt	aatttgagga	aaatacacca	aaatacatta	agtaaattat	180

ttaagatcat	agagcttgta	agtgaaaaga	taaaatttga	cctcagaaac	tctgagcatt	240
aaaaatccac	tattagcaaa	taaattacta	tggaacttctt	gctttaattt	tgtgatgaat	300
atggggtgtc	actggtaaac	caacacattc	tgaaggatac	attacttagt	gatagattct	360
tatgtacttt	gctanatnac	gtggatatga	gttgacaagt	ttctctttct	tcaatctttt	420
aaggggcnga	ngaaatgagg	aagaaaagaa	aaggattacg	catactgttc	tttctatngg	480
aaggattaga	tatgtttcct	ttgccaatat	taaaaaaaata	ataatgttta	ctactagtga	540
aaccc						545

<210> 206  
 <211> 487  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(487)  
 <223> n = A,T,C or G

<400> 206	
tttttttttt	60
catttatttag	120
caattttataa	180
cccttctccc	240
actgctgcaa	300
ttggttagaa	360
tcggtgaaaa	420
aactcttcga	480
ttcaaaa	487

<210> 207  
 <211> 332  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(332)  
 <223> n = A,T,C or G

<400> 207	
tgaattggct	60
tacatagcat	120
gcattttatag	180
atctttgcat	240
gaaatgaagg	300
aaaagaaggc	332

<210> 208  
 <211> 524  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(524)  
 <223> n = A,T,C or G

<400> 208	
agggcggtggt	60
gttgtgttcc	120
tttaaaggac	180
tcccgcggtga	240

tttggcagaa	tacttnttga	aacttgcaga	tgataactaa	gatccaagat	atttcccaaa	300
gtaaatagaa	gtgggtcata	atattaatta	cctgttcaca	tcagcttcca	tttacaagtc	360
atgagcccag	acactgacat	caaactaagc	ccacttagac	tcctcaccac	cagtctgtcc	420
tgtcatcaga	caggaggctg	tcacottgac	caaattctca	ccagtcaatc	atctatccaa	480
aaaccattac	ctgatccact	tccggtaatg	caccaccttg	gtga		524

<210> 209  
 <211> 159  
 <212> DNA  
 <213> Homo sapien

<400> 209						
gggtgaggaa	atccagagtt	gccatggaga	aaattccagt	gtcagcattc	ttgtccttg	60
tggccctctc	ctacactctg	gccagagata	ccacagtcaa	acctggagcc	aaaaaggaca	120
caaaggactc	tcgacccaaa	ctgccccaga	ccctctcca			159

<210> 210  
 <211> 256  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(256)  
 <223> n = A,T,C or G

<400> 210						
actccctggc	agacaaaggc	agaggagaga	gctctgttag	ttctgtgttg	ttgaactgcc	60
actgaatttc	tttccacttg	gactattaca	tgccanttga	gggactaatg	gaaaaacgta	120
tggggagatt	ttanccaatt	tangtntgta	aatggggaga	ctggggcagg	cgggagagat	180
ttgcagggtg	naaatgggan	ggctgggttg	ttanatgaac	agggacatag	gaggtaggca	240
ccaggatgct	aaatca					256

<210> 211  
 <211> 264  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(264)  
 <223> n = A,T,C or G

<400> 211						
acattgtttt	tttgagataa	agcattgaga	gagctctcct	taacgtgaca	caatggaagg	60
actggaacac	ataccacat	ctttgttctg	agggataatt	ttctgataaa	gtcttgctgt	120
atattcaagc	acatatgtta	tatattattc	agttccatgt	ttatagccta	gttaaggaga	180
ggggagatac	attcngaaag	aggactgaaa	gaaatactca	agtnggaaaa	cagaaaaaga	240
aaaaaaggag	caaatgagaa	gcct				264

<210> 212  
 <211> 328  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(328)  
 <223> n = A,T,C or G

<400> 212						
acccaaaaat	ccaatgctga	atatttggtc	tcattattcc	canattcttt	gattgtcaaa	60

ggattttaatg	ttgtctcagc	ttgggcactt	cagttaggac	ctaaggatgc	cagccggcag	120
gtttatatat	gcagcaacaa	tattcaagcg	cgacaacagg	ttattgaact	tgcccgccag	180
ttnaattttca	ttcccattga	cttgggatcc	ttatcatcag	ccagagagat	tgaaaattta	240
cccctacnac	tctttactct	ctgganaggg	ccagtgggtg	tagctataag	cttggccaca	300
tttttttttc	ctttattcct	ttgtcaga				328

&lt;210&gt; 213

&lt;211&gt; 250

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(250)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 213

acttatgagc	agagcgacat	atccnagtgt	agactgaata	aaactgaatt	ctctccagtt	60
taaagcattg	ctcactgaag	ggatagaagt	gactgccagg	agggaaagta	agccaaggct	120
cattatgcca	aagganatat	acattttcaat	tctccaaact	tcttcctcat	tccaagagtt	180
ttcaatattt	gcatgaacct	gctgataanc	catgttaana	aacaaatatc	tctctnacct	240
tctcatcggt						250

&lt;210&gt; 214

&lt;211&gt; 444

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(444)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 214

accagaatc	caatgctgaa	tatttggtt	cattattccc	agattctttg	attgtcaaag	60
gattttaatg	tgtctcagct	tgggcacttc	agttaggacc	taaggatgcc	agccggcagg	120
tttatatatg	cagcaacaat	attcaagcgc	gacaacagg	tattgaactt	gcccggcagg	180
tgaatttcat	tcccattgac	ttgggatcct	tatcatcagc	canagagatt	gaaaatttac	240
ccctacgact	ctttactctc	tggagagggc	cagtgggtgt	agctataagc	ttggccacat	300
ttttttttcc	tttattcctt	tgtcagagat	gcgattcatc	catatgctan	aaaccaacag	360
agtgactttt	acaaaattcc	tataganatt	gtgaataaaa	ccttacctat	agttgccatt	420
actttgctct	ccctaataata	cctc				444

&lt;210&gt; 215

&lt;211&gt; 366

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(366)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 215

acttatgagc	agagcgacat	atccaagtgt	anactgaata	aaactgaatt	ctctccagtt	60
taaagcattg	ctcactgaag	ggatagaagt	gactgccagg	agggaaagta	agccaaggct	120
cattatgcca	aagganatat	acattttcaat	tctccaaact	tcttcctcat	tccaagagtt	180
ttcaatattt	gcatgaacct	gctgataagc	catgttgaga	aacaaatatc	tctctgacct	240
tctcatcggt	aagcagaggg	tgtaggcaac	atggaccata	gcgaanaaaa	aacttagtaa	300
tccaagctgt	tttctacact	gtaaccaggt	ttccaaccaa	ggtggaaatc	tcctatactt	360
ggtgcc						366



<210> 216  
 <211> 260  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(260)  
 <223> n = A,T,C or G

<400> 216  
 ctgtataaac agaactccac tgcangaggg agggccgggc caggagaatc tccgcttgtc 60  
 caagacaggg gcctaaggag ggtctccaca ctgctnntaa gggctnttnc atttttttat 120  
 taataaaaag tnnaaaaggc ctcttctcaa cttttttccc ttnggctgga aaatttataa 180  
 atcaaaaatt tcctnaagtt ntcaagctat catatatact ntatcctgaa aaagcaacat 240  
 aattcttcct tccctccttt 260

<210> 217  
 <211> 262  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(262)  
 <223> n = A,T,C or G

<400> 217  
 acctacgtgg gtaagtttan aaatgttata atttcaggaa naggaacgca tataattgta 60  
 tcttgccctat aattttctat tttaataagg aaatagcaaa ttgggggtggg gggaatgtag 120  
 ggcattctac agtttgagca aaatgcaatt aaatgtggaa ggacagcact gaaaaatttt 180  
 atgaataatc tgtatgatta tatgtctcta gagtagattt ataattagcc acttacccta 240  
 atatccttca tgcttgtaaa gt 262

<210> 218  
 <211> 205  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(205)  
 <223> n = A,T,C or G

<400> 218  
 accaaggtgg tgcattaccg gaantggatc aangacacca tctgtggccaa cccctgagca 60  
 cccctatcaa ctcccttttg tagtaaaactt ggaaccttgg aaatgaccag gccaagactc 120  
 aggctcccc agttctactg acctttgtcc ttangtnna ngtccagggt tgctaggaaa 180  
 anaaatcagc agacacaggt gtaaa 205

<210> 219  
 <211> 114  
 <212> DNA  
 <213> Homo sapien

<400> 219  
 tactgttttg tctcagtaac aataaatata aaaagactgg ttgtgttccg gccccatcca 60  
 accacgaagt tgatttctct tgtgtgcaga gtgactgatt ttaaaggaca tgga 114

<210> 220  
 <211> 93  
 <212> DNA

<213> Homo sapien

<400> 220

actagccagc	acaaaaggca	gggtagcctg	aattgctttc	tgctctttac	atttctttta	60
aaataagcat	ttagtgctca	gtccctactg	agt			93

<210> 221

<211> 167

<212> DNA

<213> Homo sapien

<220>

<221> misc\_feature

<222> (1)...(167)

<223> n = A,T,C or G

<400> 221

actangtgca	ggtgcgcaca	aatatttgtc	gatattccct	tcattcttga	ttccatgagg	60
tcttttgccc	agcctgtggc	tctactgtag	taagtttctg	ctgatgagga	gccagnatgc	120
ccccactac	cttccttgac	gtccccana	aatcacccaa	cctctgt		167

<210> 222

<211> 351

<212> DNA

<213> Homo sapien

<400> 222

agggcgtggt	gcgaggggcg	gtactgacct	cattagtagg	aggatgcatt	ctggcacccc	60
gttcttcacc	tgtcccccaa	tccttaaaaag	gccatactgc	ataaagtcaa	caacagataa	120
atgtttgctg	aattaaagga	tggatgaaaa	aaattaataa	tgaatttttg	cataatccaa	180
ttttctcttt	tatatttcta	gaagaagttt	ctttgagcct	attagatccc	gggaatcttt	240
taggtgagca	tgattagaga	gcttgtaggt	tgcttttaca	tatatctggc	atatttgagt	300
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<210> 223

<211> 383

<212> DNA

<213> Homo sapien

<220>

<221> misc\_feature

<222> (1)...(383)

<223> n = A,T,C or G

<400> 223

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ttaaaatgtc	tgtgccaaaa	ttttgtattt	tatttggaga	cttcttatca	aaagtaatgc	180
tgccaaagga	agtctaagga	attagtagtg	ttcccmctac	ttgtttggag	tgtgctattc	240
taaaagattt	tgatttcctg	gaatgacaat	tatatattta	ctttgggtggg	ggaaanagtt	300
ataggaccac	agtcttcact	tctgatactt	gtaaattaat	cttttattgc	acttgttttg	360
accattaagc	tatatgttta	aaa				383

<210> 224

<211> 320

<212> DNA

<213> Homo sapien

<400> 224

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ggatacatgg	ttaaaggata	raagggaat	attttatcat	atgttctaaa	agagaaggaa	180

gagaaaatac	tacttttctc	aaatggaagc	ccttaaaggt	gctttgatac	tgaaggacac	240
aaatgtggcc	gtccatcctc	ctttaragtt	gcatgacttg	gacacggtaa	ctgttgagtg	300
tttaractcm	gcattgtgac					320

<210> 225  
 <211> 1214  
 <212> DNA  
 <213> Homo sapien

<400> 225						
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aactcctaca	ccatcggggt	gggcctgcac	agtcttgagg	ccgaccaaga	gccagggagc	180
cagatgggtg	aggccagcct	ctccgtacgg	cacccagagt	acaacagacc	cttgctcgct	240
aacgacctca	tgctcatcaa	gttggacgaa	tccgtgtccg	agtctgacac	catccggagc	300
atcagcattg	cttcgcagtg	ccctaccgcg	gggaactctt	gcctcgtttc	tggctggggg	360
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gggtacttgc	agggccttgc	gtctttcgga	aaagccccgt	gtggccaagt	tggcgtgcca	600
gggtgtctaca	ccaacctctg	caaattcact	gagtggatag	agaaaaccgt	ccaggccagt	660
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caggaatatc	tgttcccagc	ccctcctccc	ttagggccag	gagtccaggc	ccccagcccc	780
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gacccccagc	cccctcctcc	ctcagaccga	ggagtccagc	ccctcctccc	tcagaccagc	900
gagtccagac	ccccagcccc	ctcctccctc	agaccagggg	gtccaggccc	ccaacccttc	960
ctccctcaga	ctcagagggt	caagccccca	acccctcctt	ccccagaccc	agaggtccag	1020
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cagtgcctcc	ttgtggcacg	ttgacccaac	cttaccagtt	ggtttttcat	tttttgtccc	1140
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aaaaaaaaaa	aaaa					1214

<210> 226  
 <211> 119  
 <212> DNA  
 <213> Homo sapien

<400> 226						
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agaacctggc	ccagtcataa	tcattcatcc	tgacagtggc	aataatcacg	ataaccagt	119

<210> 227  
 <211> 818  
 <212> DNA  
 <213> Homo sapien

<400> 227						
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tttttgctac	atatgggggt	ccttttcatt	ctttgcaaaa	acactggggt	ttctgagaac	120
acggacgggt	cttagcacia	tttgtgaaat	ctgtgtaraa	ccgggctttg	caggggagat	180
aattttcctc	ctctggagga	aaggtgggtg	ttgacaggca	gggagacagt	gacaaggcta	240
gagaaagcca	cgctcggcct	tctctgaacc	aggatggaac	ggcagacccc	tgaaaacgaa	300
gcttgtcccc	ttccaatcag	ccacttctga	gaacccccat	ctaacttctc	actggaaaag	360
agggcctcct	caggagcagt	ccaagagttt	tcaaagataa	cgtgacaact	accatctaga	420
ggaaaggggt	caccctcagc	agagaagccg	agagcttaac	tctggtcgtt	tccagagaca	480
acctgctggc	tgtcttggga	tgcgcccgag	ctttgagagg	ccactacccc	atgaacttct	540
gccatccact	ggacatgaag	ctgaggacac	tgggcttcaa	cactgagttg	tcattgagag	600
gacaggtctc	gccctcaagc	cggttgaggg	cagcaaccac	tctcctcccc	tttctcacgc	660
aaagccattc	ccacaaatcc	agaccatacc	atgaagcaac	gagacccaaa	cagtttggct	720
caagaggata	tgaggactgt	ctcagcctgg	ctttgggctg	acaccatgca	cacacacaag	780
gtccacttct	aggttttcag	cctagatggg	agtcgtgt			818

<210> 228  
 <211> 744  
 <212> DNA  
 <213> Homo sapien

<400> 228  
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 tcgtggccga cctggcctct cctggcctgt ttcttaagat gcggagtcac atttcaatgg 180  
 taggaaaagt ggcttcgtaa aatagaagag cagtcactgt ggaactacca aatggcgaga 240  
 tgctcgggtgc acattgggggt gctttgggat aaaagattta tgagccaact attctctggc 300  
 accagattct aggccagttt gttccactga agcttttccc acagcagtcc acctctgcag 360  
 gctggcagct gaatggcttg ccggtggctc tgtggcaaga tcacactgag atcgatgggt 420  
 gagaaggcta ggatgcttgt ctagtgttct tagctgtcac gttggctcct tccaggttgg 480  
 ccagacgggtg ttggccactc ccttctaaaa cacaggcgcc ctctgggtga cagtgacccg 540  
 ccgtgggatg ccttggccca ttccagcagt cccagttatg catttcaagt ttggggtttg 600  
 ttcttttcgt taatgttcct ctgtgttgc agctgtcttc atttcctggg ctaagcagca 660  
 ttgggagatg tggaccagag atccactcct taagaaccag tggcgaaaaga cactttcttt 720  
 cttcactctg aagtagctgg tgggt 744

<210> 229  
 <211> 300  
 <212> DNA  
 <213> Homo sapien

<400> 229  
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 cattacacat cgaaataaaa gaaagggtggc agacttgccc aacgccaggc tgacatgtgc 120  
 tgcagggttg ttgtttttta attattattg ttagaaacgt caccacacagt ccctgttaat 180  
 ttgtatgtga cagccaactc tgagaaggtc ctatttttcc acctgcagag gatccagtct 240  
 cactaggctc ctcttgccc tcacactgga gtctccgcca gtgtgggtgc ccactgacat 300

<210> 230  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<400> 230  
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 gagcgacagt tcaaggagga gaagcttgca gagcagctca agcaagctga ggagctcagg 120  
 caatataaag tcctgggttca cactcaggaa cgagagctga cccagttaag ggagaagttg 180  
 cgggaaggga gagatgcctc cctctcattg aatgagcatc tccaggccct cctcactccg 240  
 gatgaaccgg acaagtccca ggggcaggac ctccaagaaa cagacctcgg ccgcgaccac 300  
 g 301

<210> 231  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<400> 231  
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 ggcaacacgg gacttctcat caggaagtgg gatgtagatg agctgatcaa gacggccagg 180  
 tctgaggatg gcaggatcaa tgatgtcagg ccggttggtg ccgccaatga tgaacacatt 240  
 tttttttgtg gacatgccat ccattttctgt caggatctgg ttgatgactc ggtcagcagc 300  
 c 301

<210> 232  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<400> 232  
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 ggcgacagcg gggcttcctg attctggaat ataactttgt gtaaattaac agccacctat 120  
 agaagagtcc atctgctgtg aaggagagac agagaactct gggttccgtc gtcctgtcca 180  
 cgtgctgtac caagtgtgtg tgccagcctg ttacctgttc tcaactgaaa tctggctaata 240  
 gctcttgtgt atcacttctg attctgacaa tcaatcaatc aatggcctag agcactgact 300  
 g 301

<210> 233  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<400> 233  
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 cctagaagtt acagagcatc tagctggtgc gctggcacc cttggcctcac acagactccc 180  
 gagttagctgg gactacaggc acacagtcac tgaagcaggc cctggttagca attctatgcg 240  
 tacaaattaa catgagatga gtagagactt tattgagaaa gcaagagaaa atcctatcaa 300  
 c 301

<210> 234  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<400> 234  
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 cattttattc atcatgatgc tttcttttgt ttcttctttt cgttttcttc tttttctttt 120  
 tcaatttcag caacatactt ctcaatttct tcaggattta aaatcttgag ggattgatct 180  
 cgctcatga cagcaagttc aatgtttttg ccacctgact gaaccacttc caggagtgcc 240  
 ttgatcacca gcttaatggg cagatcatct gcttcaatgg ctctcgtagt atagttcttc 300  
 t 301

<210> 235  
 <211> 283  
 <212> DNA  
 <213> Homo sapien

<400> 235  
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 aattccctca tcttttaggg aatcatttac caggtttgga gaggattcag acagctcagg 120  
 tgctttcact aatgtctctg aacttctgtc cctctttgtt catggatagt ccaataaata 180  
 atgttatctt tgaactgatg ctcataggag agaataaag aactctgagt gatatcaaca 240  
 ttagggattc aaagaaatat tagatttaag ctcacactgg tca 283

<210> 236  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<400> 236  
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 aatactttta aatcgatcag atttccctaa cccacatgca atcttcttca ccagaagagg 120  
 tcggagcagc atcatthaata ccaagcagaa tgcgtaatat ataaatacaa tggatatatg 180  
 tgggtagacg gtttcatgag tacagtgtac tgtggtagatc taatctggac ttgggttgta 240  
 aagcatcgtg taccagtcag aaagcatcaa tactcgacat gaacgaatat aaagaacacc 300  
 a 301

<210> 237  
 <211> 301

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 237

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actcaatttt	tgttcgctcc	tttttggcct	tttccaattt	gtccatctca	attttctggg	120
ccttggctaa	tgctcatag	taggagtcct	cagaccagcc	atggggatca	aacatatcct	180
ttgggtagtt	ggtgccaagc	tcgtcaatgg	cacagaatgg	atcagcttct	cgtaaatacta	240
gggttccgaa	attcttttct	cctttggata	atgtagttca	tatccattcc	ctcctttatc	300
t						301

&lt;210&gt; 238

&lt;211&gt; 301

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 238

gggcaggttt	tttttttttt	ttttttgatg	gtgcagaccc	ttgctttatt	tgtctgactt	60
gttcacagtt	cagccccctg	ctcagaaaac	caacggggcca	gctaaggaga	ggaggaggca	120
ccttgagact	tccggagtcg	aggctctcca	gggttcccca	gcccataaat	cattttctgc	180
accccctgcc	tgggaagcag	ctccctgggg	ggtgggaatg	ggtgactaga	agggatttca	240
gtgtgggacc	cagggtctgt	tcttcacagt	aggaggtgga	agggatgact	aatttcttta	300
t						301

&lt;210&gt; 239

&lt;211&gt; 239

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 239

ataagcagct	agggaattct	ttatttagta	atgtcctaac	ataaaaagttc	acataactgc	60
ttctgtcaaa	ccatgatact	gagctttgtg	acaaccacga	aataactaag	agaaggcaaa	120
cataatacct	tagagatcaa	gaaacattta	cacagttcaa	ctgtttaaaa	atagctcaac	180
attcagccag	tgagtagagt	gtgaatgcca	gcatacacag	tatacaggtc	cttcaggga	239

&lt;210&gt; 240

&lt;211&gt; 300

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 240

ggtcctaattg	aagcagcagc	ttccacattt	taacgcaggt	ttacggtgat	actgtccttt	60
gggatctgcc	ctccagtgga	accttttaag	gaagaagtgg	gccaagcta	agttccacat	120
gctgggtgag	ccagatgact	tctgttccct	ggtcactttc	ttcaatgggg	cgaatggggg	180
ctgccaggtt	tttaaaatca	tgcttcatct	tgaagcacac	ggtcacttca	ccctcctcac	240
gctgtgggtg	tactttgatg	aaaataccca	ctttgttggc	ctttctgaag	ctataatgtc	300

&lt;210&gt; 241

&lt;211&gt; 301

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 241

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cctcttttga	ggaaactcca	gcagctatgt	tggtgtctct	gaggggaatgc	aacaaggctg	120
ctcctccatg	tattggaaaa	ctgcaaactg	gactcaactg	gaagggaagt	ctgctgccag	180
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tcctcctcct	gtcatacggg	ctctctcaag	catcctttgt	tgtcaggggc	ctaaaaggga	300
g						301

&lt;210&gt; 242

&lt;211&gt; 301

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 242

ccgaggtcct	gggatgcaac	caatcactct	gtttcacgtg	acttttatca	ccatacaatt	60
tgtggcattt	cctcattttc	tacattgtag	aatcaagagt	gtaaataaat	gtatatcgat	120
gtcttcaaga	atatatcatt	cctttttcac	tagaaccat	tcaaaatata	agtcaagaat	180
cttaatatca	acaaatatat	caagcaaact	ggaaggcaga	ataactacca	taatttagta	240
taagtacca	aagttttata	aatcaaaagc	cctaagtata	accattttta	gaattcaatc	300
a						301

&lt;210&gt; 243

&lt;211&gt; 301

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 243

aggtaagtcc	cagtttgaag	ctcaaaagat	ctggtatgag	cataggctca	tcgacgacat	60
ggtggcccaa	gctatgaaat	cagagggagg	cttcatctgg	gcctgtaaaa	actatgatgg	120
tgacgtgcag	tcggactctg	tggcccaagg	gtatggctct	ctcggcatga	tgaccagcgt	180
gctggtttgt	ccagatggca	agacagtaga	agcagaggct	gcccacggga	ctgtaaccgg	240
tcactaccgc	atgttccaga	aaggacagga	gacgtccacc	aatcccattg	cttccatttt	300
t						301

&lt;210&gt; 244

&lt;211&gt; 300

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 244

gctggtttgc	aagaatgaaa	tgaatgattc	tacagctagg	acttaacctt	gaaatggaaa	60
gtcatgcaat	cccatttgca	ggatctgtct	gtgcacatgc	ctctgtagag	agcagcattc	120
ccagggacct	tggaacacgt	tgacactgta	aggtgcttgc	tccccaagac	acatcctaaa	180
aggtgtttgta	atggtgaaaa	cgtcttctct	ctttattggc	ccttcttatt	tatgtgaaca	240
actgtttgtc	ttttgtgtat	ctttttttaa	ctgtaaagtt	caattgtgaa	aatgaatatc	300

&lt;210&gt; 245

&lt;211&gt; 301

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 245

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tatatactta	gataaaaaat	gaggtgaatt	actatccatt	gaaatcatgc	tcttagaatt	120
aaggccagga	gatattgtca	ttaatgtara	cttcaggaca	ctagagtata	gcagccctat	180
gttttcaaag	agcagagatg	caattaaata	ttgttttagca	tcaaaaaggc	cactcaatac	240
agctaataaa	atgaaagacc	taatttctaa	agcaattctt	tataatttac	aaagttttaa	300
g						301

&lt;210&gt; 246

&lt;211&gt; 301

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 246

ggtctgtcct	acaatgcctg	cttcttgaaa	gaagtcggca	ctttctagaa	tagctaaaata	60
acctgggctt	attttaaaga	actatttgta	gtcagatttg	gttttcctat	ggctaaaaata	120
agtgccttct	gtgaaaatta	aataaaacag	ttaattcaaa	gccttgatat	atgttaccac	180
taacaatcat	actaaatata	ttttgaagta	caaagtttga	catgctctaa	agtgacaacc	240
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c						301

<210> 247  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<400> 247  
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 gtgtcctgtg ttcagggtcg acacacaatc ctcatgggaa caggatcacc catgcgctgc 180  
 ccttgatgat caagggttgg gcttaagtgg attaaggagg gcaagttctg ggttccttgc 240  
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 a 301

<210> 248  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<400> 248  
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 acaggaagaa agtggtttgg aagacagcca aagaaataaa agcagattaa attgtatcag 180  
 gtacattcca gcctgttggc aactccataa aaacatttca gattttaatc ccgaatttag 240  
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 c 301

<210> 249  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<400> 249  
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 ccaggagac acagcagtga ctcagagctg gtcgcacact gtgcctccct cctcaccgcc 180  
 catcgtaatg aattattttg aaaattaatt ccaccatcct ttcagattct ggatggaaag 240  
 actgaatctt tgactcagaa ttgtttgctg aaaagaatga tgtgactttc ttagtcattt 300  
 a 301

<210> 250  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<400> 250  
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 cataagcaca tcagtacttt tctctggctg gaatagtaaa ctaaagtatg gtacatctac 180  
 ctaaaagact actatgtgga ataatacata ctaatgaagt attacatgat ttaaagacta 240  
 caataaaacc aaacatgctt ataacattaa gaaaaacaat aaagatacat gattgaaacc 300  
 a 301

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 <211> 301  
 <212> DNA  
 <213> Homo sapien

<400> 251  
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 ggcaggggtc ctcaaaaatg ccactgtcac tgccaggaaa tgcttctgag cagtacacct 180  
 cattgggatc aatgaaaagc ttcaagaaat cttcaggctc actctcttga aggcccggaa 240



cctctggagg ggggcagtgg aatcccagct ccaggacgga tcctgtcgaa aagatatacct 300  
c 301

<210> 252  
<211> 301  
<212> DNA  
<213> Homo sapien

<400> 252  
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ttttctacat tgtagaatca agagtgtaaa taaatgtata tcgatgtctt caagaatata 120  
tcattccttt ttcactagga acccattcaa aatataagtc aagaatctta atatcaacaa 180  
atatatcaag caaactggaa ggcagaataa ctaccataat ttagtataag tacccaaagt 240  
tttataaatc aaaagcccta atgataacca tttttagaat tcaatcatca ctgtagaatc 300  
a 301

<210> 253  
<211> 301  
<212> DNA  
<213> Homo sapien

<400> 253  
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caactaaaaa aaaaaaataa agaaaaaatg tgctgcgttc tgaaaaataa ctccttagct 120  
tggctcgatt gttttcagac cttaaaatat aaacttggtt cacaagcttt aatccatgtg 180  
gatttttttt cttagagaac cacaaaacat aaaaggagca agtcggactg aatacctgtt 240  
tccatagtgc ccacagggtta ttcttcacat tttctccata ggaaaatgct ttttcccaag 300  
g 301

<210> 254  
<211> 301  
<212> DNA  
<213> Homo sapien

<400> 254  
cgctgcgcct ttcccttggg ggaggggcaa ggccagaggg ggtccaagtg cagcacgagg 60  
aacttgacca attcccttga agcgggtggg ttaaaccctg taaatgggaa caaatcccc 120  
ccaaatctct tcatcttacc ctggtggact cctgactgta gaattttttg gttgaaacaa 180  
gaaaaaaata aagctttgga cttttcaagg ttgcttaaca ggtactgaaa gactggcctc 240  
acttaaaactg agccaggaaa agctgcagat ttattaatgg gtgtgttagt gtgcagtgcc 300  
t 301

<210> 255  
<211> 302  
<212> DNA  
<213> Homo sapien

<400> 255  
agcttttttt tttttttttt tttttttttt ttcattaaaa aatagtgtctc tttattataa 60  
attactgaaa tgtttctttt ctgaatataa atataaatat gtgcaaagtt tgacttggat 120  
tgggattttg ttgagttctt caagcatctc ctaataccct caagggcctg agtagggggg 180  
aggaaaaagg actggaggtg gaatctttat aaaaaacaag agtgattgag gcagattgta 240  
aacattatta aaaaacaaga aacaaacaaa aaaatagaga aaaaaaccac cccaacacac 300  
aa 302

<210> 256  
<211> 301  
<212> DNA  
<213> Homo sapien

<220>  
<221> misc\_feature

80

&lt;222&gt; (1)...(301)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 256

gttccagaaa	acattgaagg	tggtttccca	aagtctaact	agggataccc	cctctagcct	60
aggaccctcc	tccccacacc	tcaatccacc	aaaccatcca	taatgcaccc	agataggccc	120
acccccaaaa	gcctggacac	cttgagcaca	cagttatgac	caggacagac	tcctctctat	180
aggcaaatag	ctgctggcaa	actggcatta	cctggtttgt	ggggatgggg	gggcaagtgt	240
gtggcctctc	ggcctgggta	gcaagaacat	tcagggtagg	cctaagttan	tcgtgttagt	300
t						301

&lt;210&gt; 257

&lt;211&gt; 301

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 257

gttgtggagg	aactctggct	tgctcattaa	gtcctactga	ttttcactat	ccccgaatt	60
tccccactta	ttttgtctt	tcactatcgc	aggccttaga	agaggtctac	ctgcctccag	120
tcttacctag	tccagtctac	ccccggagt	tagaatggcc	atcctgaagt	gaaaagtaat	180
gtcacattac	tcccttcagt	gatttcttgt	agaagtgcc	atccctgaat	gccaccaaga	240
tcttaatctt	cacatcttta	atcttatctc	tttgactcct	ctttacaccg	gagaaggctc	300
c						301

&lt;210&gt; 258

&lt;211&gt; 301

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(301)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 258

cagcagtagt	agatgccgta	tgccagcacg	cccagcactc	ccaggatcag	caccagcacc	60
agggggccag	ccaccaggcg	cagaagcaag	ataaacagta	ggctcaagac	cagagccacc	120
cccagggcaa	caagaatcca	ataccaggac	tgggcaaaat	cttcaaagat	cttaacactg	180
atgtctcggg	cattgaggct	gtcaataana	cgctgatccc	ctgctgtatg	gtggtgtcat	240
tggatgatcc	tgggagcgcc	ggtggagtaa	cgttgggtcca	tggaaagcag	cgcccacaac	300
t						301

&lt;210&gt; 259

&lt;211&gt; 301

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(301)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 259

tcatatatgc	aaacaaatgc	agactangcc	tcaggcagag	actaaaggac	atctcttggg	60
gtgtcctgaa	gtgatattgga	cccctgaggg	cagacaccta	agtagggaatc	ccagtgggaa	120
gcaaagccat	aaggaagccc	aggattcctt	gtgatcagga	agtggggccag	gaagggtctgt	180
tccagctcac	atctcatctg	catgcagcac	ggaccggatg	cgcccactgg	gtcttggctt	240
ccctcccatc	ttctcaagca	gtgtccttgt	tgagccattt	gcctccttgg	ctccagggtgg	300
c						301

&lt;210&gt; 260

&lt;211&gt; 301

<212> DNA  
<213> Homo sapien

<400> 260  
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 aaggtgtctt aacttgaaaa agattaggag tcaactggtt acaagttata attgaatgaa 120  
 agaactgtaa cagccacagt tggccatttc atgccaatgg cagcaaaca caggattaac 180  
 tagggcaaaa taaataagtg tgtggaagcc ctgataagtg cttaataaac agactgattc 240  
 actgagacat cagtacctgc ccgggcggcc gtcgagccg aattctgcag atatccatca 300  
 c 301

<210> 261  
<211> 301  
<212> DNA  
<213> Homo sapien

<400> 261  
 aaatattcga gcaaatcctg taactaatgt gtctccataa aaggctttga actcagtga 60  
 tctgcttcca tccacgattc tagcaatgac ctctcggaca tcaaagctcc tcttaagggt 120  
 agcaccaact attccataca attcatcagc aggaaataaa ggctcttcag aagggttcaat 180  
 ggtgacatcc aattttcttct gataatttag attcctcaca accttcctag ttaagtgaag 240  
 ggcattgatga tcatccaaag ccagtggtgc acttactcca gactttctgc aatgaagatc 300  
 a 301

<210> 262  
<211> 301  
<212> DNA  
<213> Homo sapien

<400> 262  
 gaggagagcc tgttacagca tttgtaagca cagaatactc caggagtatt tgtaattgtc 60  
 tgtgagcttc ttgccgcaag tctctcagaa atttaaaaag atgcaaatcc ctgagtcacc 120  
 cctagacttc ctaaaccaga tcctctgggg ctggaacctg gcactctgca tttgtaatga 180  
 gggctttctg gtgcacacct aattttgtgc atctttgccc taaatcctgg attagtcccc 240  
 catcattacc cccacattat aatgggatag attcagagca gatactctcc agcaagaat 300  
 c 301

<210> 263  
<211> 301  
<212> DNA  
<213> Homo sapien

<220>  
<221> misc\_feature  
<222> (1)...(301)  
<223> n = A,T,C or G

<400> 263  
 tttagcttgt ggtaaatgac tcacaaaact gattttaaaa tcaagttaat gtgaattttg 60  
 aaaattacta cttaatccta attcacaata acaatggcat taaggtttga cttgagttgg 120  
 ttcttagtat tatttatggt aaataggctc ttaccacttg caaataactg gccacatcat 180  
 taatgactga cttcccagta aggctctcta aggggtaagt angaggatcc acaggatttg 240  
 agatgctaag gccccagaga tcgtttgatc caaccctctt attttcagag gggaaaatgg 300  
 g 301

<210> 264  
<211> 301  
<212> DNA  
<213> Homo sapien

<400> 264  
 aaagacgtta aaccactcta ctaccacttg tggaactctc aaagggtaaa tgacaaaacc 60

aatgaatgac	tctaaaaaca	atattttacat	ttaatggttt	gtagacaata	aaaaaacaag	120
gtggatagat	ctagaattgt	aacattttta	gaaaaccata	scatttgaca	gatgagaaag	180
ctcaattata	gatgcaaagt	tataactaaa	ctactatagt	agtaaagaaa	tacatttcac	240
acccttcata	taaattcact	atcttggctt	gaggcactcc	ataaaatgta	tcacgtgcat	300
a						301

&lt;210&gt; 265

&lt;211&gt; 301

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 265

tgcccaagtt	atgtgtaagt	gtatccgcac	ccagaggtaa	aactacactg	tcattctttgt	60
cttcttgtga	cgcagtattt	cttctctggg	gagaagccgg	gaagtcttct	cctggctcta	120
catattcttg	gaagtctcta	atcaactttt	gttccatttg	tttcatttct	tcaggaggga	180
ttttcagttt	gtcaacatgt	tctctaacaa	cacttgccca	tttctgtaaa	gaatccaaag	240
cagtccaagg	ctttgacatg	tcaacaacca	gcataactag	agtatccttc	agagatacgg	300
c						301

&lt;210&gt; 266

&lt;211&gt; 301

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 266

taccgtctgc	ccttcctccc	atccaggcca	tctgcgaatc	tacatgggtc	ctcctattcg	60
acaccagatc	actcttttct	ctacccacag	gcttgctatg	agcaagagac	acaacctcct	120
ctcttctgtg	ttccagcttc	ttttcctgtt	cttcccaccc	cttaagttct	attcctgggg	180
atagagacac	caatacccat	aacctctctc	ctaagcctcc	ttataaccca	gggtgcacag	240
cacagactcc	tgacaactgg	taaggccaat	gaactgggag	ctcacagctg	gctgtgcctg	300
a						301

&lt;210&gt; 267

&lt;211&gt; 301

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 267

aaagagcaca	ggccagctca	gcctgccctg	gccatctaga	ctcagcctgg	ctccatgggg	60
gttctcagtg	ctgagtcctat	ccaggaaaag	ctcacctaga	ccttctgagg	ctgaatcttc	120
atcctcacag	gcagcttctg	agagcctgat	attcctagcc	ttgatgggtc	ggagtaaagc	180
ctcattctga	ttcctctcct	tcttttcttt	caagttggct	ttcctcacat	ccctctgttc	240
aattcgcttc	agcttgtctg	ctttagccct	catttccaga	agcttcttct	ctttggcatc	300
t						301

&lt;210&gt; 268

&lt;211&gt; 301

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 268

aatgtctcac	tcaactactt	cccagcctac	cgtggcctaa	ttctgggagt	tttcttctta	60
gatcttggga	gagctgggtc	ttctaaggag	aaggaggaag	gacagatgta	actttggatc	120
tcgaagagga	agtctaattg	aagtaattag	tcaacgggtc	ttgttttagac	tcttggaata	180
tgctgggtgg	ctcagtgagc	ccttttggag	aaagcaagta	ttattcttaa	ggagtaacca	240
cttcccatg	ttctactttc	taccatcatc	aattgtatat	tatgtattct	ttggagaact	300
a						301

&lt;210&gt; 269

&lt;211&gt; 301

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 269

taacaatata	cactagctat	ctttttaact	gtccatcatt	agcaccaatg	aagattcaat	60
aaaattacct	ttattcacac	atctcaaaac	aattctgcaa	attcttagtg	aagtttaact	120
atagtcacag	accttaaata	ttcacattgt	tttctatgtc	tactgaaaat	aagttcacta	180
cttttctgga	tattctttac	aaaatcttat	taaaattcct	ggtattatca	cccccaatta	240
tacagtagca	caaccacctt	atgtagtttt	tacatgatag	ctctgtagaa	gtttcacatc	300
t						301

&lt;210&gt; 270

&lt;211&gt; 301

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 270

cattgaagag	cttttgcgaa	acatcagaac	acaagtgcct	ataaaattaa	ttaagcctta	60
cacaagaata	catattcctt	ttatttctaa	ggagttaaac	atagatgtag	ctgatgtgga	120
gagcttgctg	gtgcagtgca	tattggataa	cactattcat	ggccgaattg	atcaagtcaa	180
ccaactcctt	gaactggatc	atcagaagaa	gggtggtgca	cgatatactg	cactagataa	240
tggaccaacc	aactaaattc	tctcaccagg	ctgtatcagt	aaactggctt	aacagaaaac	300
a						301

&lt;210&gt; 271

&lt;211&gt; 301

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(301)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 271

aaaaggttct	cataagatta	acaatttaaa	taaatatttg	atagaacatt	ctttctcatt	60
tttatagctc	atcttttagg	ttgatattca	gttcatgctt	cccttgctgt	tcttgatcca	120
gaattgcaat	cacttcatca	gcctgtattc	gctccaattc	tctataaagt	gggtccaagg	180
tgaaccacag	agccacagca	cacctctttc	ccttggtgac	tgccttcacc	ccatganggt	240
tctctctctc	agatganaac	tgatcatgcg	cccacatttt	gggttttata	gaagcagtca	300
c						301

&lt;210&gt; 272

&lt;211&gt; 301

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 272

taaattgcta	agccacagat	aacaccaatc	aaatggaaca	aatcactgtc	ttcaaagtgc	60
ttatcagaaa	accaaagtag	cctggaatct	tcataatacc	taaacatgcc	gtatttagga	120
tccaataatt	ccctcatgat	gagcaagaaa	aattctttgc	gcaccctctc	tgcattccaca	180
gcatcttctc	caacaaatat	aaccttgagt	ggcttcttgt	aatctatgtt	ctttgttttc	240
ctaaggactt	ccattgcata	tcttacaata	ttttctctac	gcaccactag	aattaagcag	300
g						301

&lt;210&gt; 273

&lt;211&gt; 301

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(301)

&lt;223&gt; n = A,T,C or G

## &lt;400&gt; 273

acatgtgtgt	atgtgtatct	ttgggaaaaan	aanaagacat	cttgtttayt	atTTTTTTgg	60
agagangctg	ggacatggat	aatcacwtaa	tttgctayta	tyactttaat	ctgactygaa	120
gaaccgtcta	aaaataaaaat	ttacatgtc	dtatattcct	tatagtatgc	ttatttcacc	180
ttytctctgt	ccagagagag	tatcagtgc	ananatttma	gggtgaamac	atgmattggt	240
gggacttnty	tttacngagm	accctgccc	sgcgccctcg	makngantt	ccgcsananc	300
t						301

&lt;210&gt; 274

&lt;211&gt; 301

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(301)

&lt;223&gt; n = A,T,C or G

## &lt;400&gt; 274

cttatatact	ctttctcaga	ggcaaaagag	gagatgggta	atgtagacaa	ttctttgagg	60
aacagtaaat	gattattaga	gagaangaat	ggaccaagga	gacagaaatt	aacttgtaaa	120
tgattctctt	tggaatctga	atgagatcaa	gaggccagct	ttagcttggtg	gaaaagtcca	180
tctaggtatg	gttgcaattct	cgctctcttt	tctgcagtag	ataatgaggt	aaccgaaggc	240
aattgtgctt	cttttgataa	gaagctttct	tggtcatatc	aggaaattcc	aganaaaagtc	300
c						301

&lt;210&gt; 275

&lt;211&gt; 301

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(301)

&lt;223&gt; n = A,T,C or G

## &lt;400&gt; 275

tcggtgtcag	cagcacgtgg	cattgaacat	tgcaatgtgg	agcccaaacc	acagaaaatg	60
gggtgaaatt	ggccaacttt	ctattaactt	atgttggtgca	tttgccacc	aacagtaagc	120
tggcccttct	aataaaagaa	aattgaaagg	tttctcacta	aacggaatta	agtagtggag	180
tcaagagact	cccaggcctc	agcgtacctg	cccgggcggc	cgctcgaagc	cgaattctgc	240
agatatccat	cacactggcg	gncgctcgan	catgcatcta	gaaggnccaa	ttcgccctat	300
a						301

&lt;210&gt; 276

&lt;211&gt; 301

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

## &lt;400&gt; 276

tgtacacata	ctcaataaat	aaatgactgc	attgtggtat	tattactata	ctgattatat	60
ttatcatgtg	acttctaatt	agaaaatgta	tccaaaagca	aaacagcaga	tatacaaaat	120
taaagagaca	gaagatagac	attaacagat	aaggcaactt	atacattgag	aatccaaatc	180
caatacattt	aaacatttgg	gaaatgaggg	ggacaaatgg	aagccagatc	aaatttgtgt	240
aaaactattc	agtatgtttc	ccttgcttca	tgtctgagaa	ggctctcctt	caatggggat	300
g						301

&lt;210&gt; 277

&lt;211&gt; 301

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(301)  
 <223> n = A,T,C or G

<400> 277  
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 atacagagga cttggaggaa gcagagcaac tgaatttaat ttaaaagaag gaaaacattg 120  
 gaatcatggc actcctgata ctttcccaaa tcaacactct caatgcccc ccctcgctct 180  
 caccatagtg gggagactaa agtggccacg gatttgcctt anggtgtgcag tgcgttctga 240  
 gttcncgtgc gattacatct gaccagtctc ctttttccga agtccttccg ttcaatcttg 300  
 c 301

<210> 278  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(301)  
 <223> n = A,T,C or G

<400> 278  
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 aacatatcaa atgaaacagg gaaaatgaag ctgacaattt atggaagcca gggcttgtca 120  
 cagtctctac tgttattatg cattacctgg gaatttatat aagcccttaa taataatgcc 180  
 aatgaacatc tcatgtgtgc tcacaatgtt ctggcactat tataagtgtc tcacaggttt 240  
 tatgtgttct tcgtaacttt atggantagg tactcggccg cgaacacgct aagccgaatt 300  
 c 301

<210> 279  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(301)  
 <223> n = A,T,C or G

<400> 279  
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 gttatattaa ttgccaatat aagtaaatat agattatata tgtatagtgt ttcacaaagc 120  
 ttagaccttt accttccagc caccacacag tgcttgatat ttcagagtca gtcattgggt 180  
 atacatgtgt agttccaaag cacataagct agaanaanaa atatttctag ggagcactac 240  
 catctgtttt cacatgaaat gccacacaca tagaactcca acatcaattt cattgcacag 300  
 a 301

<210> 280  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<400> 280  
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 tgagaaaaaa acctaagatt agcccaggta gttgcctgta acttcagttt ttctgcctgg 180  
 gtttgatata gtttaggggt ggggttagat taagatctaa attacatcag gacaaagaga 240  
 cagactatta actccacagt taattaagga ggtatgttcc atgtttattt gttaaagcag 300  
 t 301

86

<210> 281  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<400> 281  
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 gccgagcaat ccaaatcctg aatgaagggg catcttctga aaaaggagat ctgaatctca 120  
 atgtggtagc aatggcttta tcgggttata cggatgagaa gaactccctt tggagagaaa 180  
 tgtgtagcac actgcgatta cagctaaata acccgatttt gtgtgtcatg tttgcatttc 240  
 tgacaagtga aacaggatct tacgatggag ttttztatga aaacaaagtt gcagtacctc 300  
 g 301

<210> 282  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<400> 282  
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 tccagaaccc aaaaattaaag aaattcaaaa agacattttg tgggcacctg ctgacacaga 120  
 agcgagaag caaagccag gcagaacat gctaacctta cagctcagcc tgcacagaag 180  
 cgcagaagca aagcccaggc agaaccatgc taaccttaca gctcagcctg cacagaagcg 240  
 cagaagcaaa gccccaggcag aacatgctaa ccttacagct cagcctgcac agaagcacag 300  
 a 301

<210> 283  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<400> 283  
 atctgtatac ggcagacaaa ctttatarag tgtagagagg tgagcgaaag gatgcaaaag 60  
 cactttgagg gctttataat aatatgctgc ttgaaaaaaa aaatgtgtag ttgatactca 120  
 gtgcatctcc agacatagta aggggttgct ctgaccaatc aggtgatcat tttttctatc 180  
 acttcccagg ttttatgcaa aaattttgtt aaattctata atggtgatat gcatctttta 240  
 ggaaacatat acatttttaa aaatctattt tatgtaagaa ctgacagacg aatttgcttt 300  
 g 301

<210> 284  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<400> 284  
 cagggtacaaa acgctattaa gtggcttaga atttgaacat ttgtggtctt tatttacttt 60  
 gcttcgtgtg tgggcaaaagc aacatcttcc ctaaataat attaccaaga aaagcaagaa 120  
 gcagattagg tttttgacaa aacaaacagg ccaaaagggg gctgacctgg agcagagcat 180  
 ggtgagaggc aaggcatgag agggcaagtt tgttgtggac agatctgtgc ctactttatt 240  
 actggagtaa aagaaaacaa agttcattga tgtcgaagga tatatacagt gttagaaatt 300  
 a 301

<210> 285  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(301)  
 <223> n = A,T,C or G



<400> 285  
 acatcaccat gatcggatcc cccacccatt atacgttgta tgtttacata aatactcttc 60  
 aatgatcatt agtgttttaa aaaaaatact gaaaactcct tctgcatccc aatctctaac 120  
 caggaaagca aatgctatct acagacctgc aagccctccc tcaaacnaaa ctatttctgg 180  
 attaaatatg tctgacttct tttgaggtca cacgactagg caaatgctat ttacgatctg 240  
 caaaagctgt ttgaagagtc aaagccccc tgtgaacacg atttctggac cctgtaacag 300  
 t 301

<210> 286  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<400> 286  
 taccactgca ttccagcctg ggtgacagag tgagactccg tctccaaaaa aaactttgct 60  
 tgtatattat ttttgcccta cagtggatca ttctagtagg aaaggacagt aagatttttt 120  
 atcaaaatgt gtcatgccag taagagatgt tatattcttt tctcatttct tccccacca 180  
 aaaataagct accatatagc ttataagtct caaatttttg ccttttacta aaatgtgatt 240  
 gtttctgttc attgtgtatg cttcatcacc tatattaggc aaattccatt ttttcccttg 300  
 t 301

<210> 287  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<400> 287  
 tacagatctg ggaactaaat attaaaaatg agtgtggctg gatatatgga gaatgttggg 60  
 cccagaagga acgtagagat cagatattac aacagctttg ttttgagggt tagaaatatg 120  
 aaatgatctg gttatgaacg cacagtttag gcagcagggc cagaatcctg accctctgcc 180  
 ccgtggttat ctctcctcca gcttggctgc ctcatgttat cacagtattc cattttgttt 240  
 gttgcatgtc ttgtgaagcc atcaagattt tctcgtctgt tttcctctca ttggtaatgc 300  
 t 301

<210> 288  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<400> 288  
 gtacacctaa ctgcaaggac agctgaggaa tgtaatgggc agccgctttt aaagaagtag 60  
 agtcaatagg aagacaaatt ccagttccag ctcatctggg gtatctgcaa agctgcaaaa 120  
 gatcttttaa gacaatttca agagaatatt tccttaaagt tggcaatttg gagatcatat 180  
 aaaagcatct gcttttgtga tttaatttag ctcatctggc cactggaaga atccaaacag 240  
 tctgccttaa ttttgatga atgcatgatg gaaattcaat aatttagaaa gttaaaaaaa 300  
 a 301

<210> 289  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(301)  
 <223> n = A,T,C or G

<400> 289  
 ggtacactgt ttccatgtta tgtttctaca cattgctacc tcagtgtctc tggaaactta 60  
 gcttttgatg tctccaagta gtccaccttc atttaactct ttgaaactgt atcatctttg 120  
 ccaagtaaga gtgggtggcct atttcagctg ctttgacaaa atgactggct cctgacttaa 180

cgttctataa atgaatgtgc tgaagcaaag tgcccatggt ggcggcgaan aagagaaaga 240  
 tgtgttttgt tttggactct ctgtggtccc ttccaatgct gtgggtttcc aaccagnnga 300  
 a 301

<210> 290  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(301)  
 <223> n = A,T,C or G

<400> 290  
 acactgagct cttcttgata aatatacaga atgcttggca tataacaagat tctatactac 60  
 tgactgatct gttcatttct ctacagctc ttaccccaa aagcttttcc accctaagtg 120  
 ttctgacctc ttttctaata cacagtaggg atagaggcag anccacctac aatgaacatg 180  
 gagttctatc aagaggcaga aacagcacag aatcccagtt ttaccattcg ctagcagtgc 240  
 tgccttgaac aaaaacattt ctccatgtct cattttcttc atgcctcaag taacagtgaag 300  
 a 301

<210> 291  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<400> 291  
 caggtaccaa tttcttctat cctagaaaca tttcatttta tgttggtgaa acataacaac 60  
 tatatcagct agattttttt tctatgcttt acctgctatg gaaaatttga cacattctgc 120  
 tttactcttt tgtttatagg tgaatcacaa aatgtatttt tatgtattct gtagttcaat 180  
 agccatggct gtttacttca ttttaattat ttagcataaa gacattatga aaaggcctaa 240  
 acatgagctt cacttcccca ctaactaatt agcatctggt atttcttaac cgtaatgcct 300  
 a 301

<210> 292  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(301)  
 <223> n = A,T,C or G

<400> 292  
 accttttagt agtaatgtct aataataaat aagaaatcaa ttttataagg tccatatagc 60  
 tgtatttaaat aattttttaag tttaaaagat aaaataccat catttttaaat gttgggtattc 120  
 aaaaccaaag natataaccg aaaggaaaaa cagatgagac ataaaaatgat ttgcnagatg 180  
 ggaaatatag tasttyatga atgttnatta aattccagtt ataatagtgg ctacacactc 240  
 tcactacaca cacagacccc acagtcctat atgccacaaa cacatttcca taacttgaaa 300  
 a 301

<210> 293  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<400> 293  
 ggtaccaagt gctggtgcc aacctgttacc tgttctcact gaaaagtctg gctaattgctc 60  
 ttgtgtagtc acttctgatt ctgacaatca atcaatcaat ggcctagagc actgactgtt 120  
 aacacaaacg tcactagcaa agtagcaaca gctttaagtc taaatacaaa gctgttctgt 180

gtgagaattt tttaaaaggc tacttgtata ataacccttg tcatttttaa tgtacctcgg 240  
 ccgcgaccac gctaagccga attctgcaga tatccatcac actggcggcc gctcgagcat 300  
 g 301

<210> 294  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(301)  
 <223> n = A,T,C or G

<400> 294  
 tgacccataa caatatacac tagctatctt ttttaactgtc catcattagc accaatgaag 60  
 attcaataaa attaccttta ttcacacatc tcaaaacaat tctgcaaatt cttagtgaag 120  
 ttttaactata gtcacaganc ttaaattatc acattgtttt ctatgtctac tgaaaataag 180  
 ttcactactt ttctgggata ttctttacaa aatcttatta aaattcctgg tattatcacc 240  
 cccaattata cagtagcaca accaccttat gtagttttta catgatagct ctgtagaggt 300  
 t 301

<210> 295  
 <211> 305  
 <212> DNA  
 <213> Homo sapien

<400> 295  
 gtactctttc tctcccctcc tctgaattta attctttcaa cttgcaattt gcaaggatta 60  
 cacatttcac tgtgatgtat attgtgttgc aaaaaaaaaa gtgtctttgt ttaaaattac 120  
 ttggtttgtg aatccatctt gctttttccc cattgggaact agtcattaac ccatctctga 180  
 actggtagaa aaacrtctga agagctagtc tatcagcatc tgacagggtga attggatggt 240  
 tctcagaacc atttcaccca gacagcctgt ttctatcctg ttttaataaat tagtttgggt 300  
 tctct 305

<210> 296  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<400> 296  
 aggtactatg ggaagctgct aaaataatat ttgatagtaa aagtatgtaa tgtgctatct 60  
 cacctagtag taaactaaaa ataaactgaa actttatgga atctgaagtt attttccttg 120  
 attaaataga attaataaac caatatgagg aaacatgaaa ccatgcaatc tactatcaac 180  
 tttgaaaaag tgattgaacg aaccacttag ctttcagatg atgaacactg ataagtcatt 240  
 tgtcattact ataaatttta aaatctgtta ataagatggc ctatagggag gaaaaagggg 300  
 c 301

<210> 297  
 <211> 300  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(300)  
 <223> n = A,T,C or G

<400> 297  
 actgagtttt aactggacgc caagcaggca aggctggaag gttttgctct ctttgtgcta 60  
 aaggttttga aaaccttgaa ggagaatcat tttgacaaga agtacttaag agtctagaga 120  
 acaaagangt gaaccagctg aaagctctcg ggggaanctt acatgtgttg ttaggcctgt 180

90

tccatcattg	ggagtgcact	ggccatccct	caaaatttgt	ctgggctggc	ctgagtggtc	240
accgcacctc	ggccgcgacc	acgctaagcc	gaattctgca	gatatccatc	acactggcgg	300

<210> 298  
 <211> 301  
 <212> DNA  
 <213> Homo sapien  
  
 <220>  
 <221> misc\_feature  
 <222> (1)...(301)  
 <223> n = A,T,C or G

<400> 298						
tatggggttt	gtcacccaaa	agctgatgct	gagaaaggcc	tccctggggc	ccctcccgcg	60
ggcatctgag	agacctgggtg	ttccagtgtt	tctggaaatg	ggccccagtg	ccgccggctg	120
tgaagctctc	agatcaatca	cgggaagggc	ctggcggtgg	tggccacctg	gaaccaccct	180
gtcctgtctg	tttacatttc	actaycaggt	tttctctggg	cattacnatt	tgttccccta	240
caacagtgac	ctgtgcattc	tgctgtggcc	tgctgtgtct	gcaggtggct	ctcagcgagg	300
t						301

<210> 299  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<400> 299						
gttttgagac	ggagtttcac	tcttgttgcc	cagactggac	tgcaatggca	gggtctctgc	60
tcaactgcacc	ctctgcctcc	caggttcgag	caattctcct	gcctcagcct	cccaggtagc	120
tgggattgca	ggctcacgcc	accataccca	gctaattttt	ttgtattttt	agtagagacg	180
gagtttcgcc	atgttggcc	gctggtctca	aactcctgac	ctcaagcgac	ctgcctgcct	240
cggcctccca	aagtgtctgga	attataggca	tgagtcaaca	cgcccagcct	aaagatatatt	300
t						301

<210> 300  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<400> 300						
attcagtttt	atttgctgcc	ccagtatctg	taaccaggag	tgccacaaaa	tcttgccaga	60
tatgtccac	accactggg	aaaggctccc	acctggctac	ttcctctatc	agctgggtca	120
gctgcattcc	acaaggttct	cagcctaattg	agtttcaacta	cctgccagtc	tcaaaactta	180
gtaaagcaag	accatgacat	tccccacgg	aaatcagagt	ttgccccacc	gtcttggtac	240
tataaagcct	gcctctaaca	gtccttgctt	cttcacacca	atcccagcgcg	catcccccat	300
g						301

<210> 301  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<400> 301						
ttaaattttt	gagaggataa	aaaggacaaa	taatctagaa	atgtgtcttc	ttcagtctgc	60
agaggacccc	aggtctccaa	gcaaccacat	ggtcaagggc	atgaataatt	aaaagttggt	120
gggaactcac	aaagaccctc	agagctgaga	caccacaac	agtgggagct	cacaaagacc	180
ctcagagctg	agacaccac	aacagtggga	gctcaciaag	accctcagag	ctgagacacc	240
cacaacagca	cctcgttcag	ctgccacatg	tgtgaataag	gatgcaatgt	ccagaagtgt	300
t						301

<210> 302  
 <211> 301

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 302

aggtacacat	ttagcttgtg	gtaaatgact	cacaaaactg	attttaaaat	caagttaatg	60
tgaattttga	aaattactac	ttaatcctaa	ttcacataa	caatggcatt	aaggtttgac	120
ttgagttggt	tcttagtatt	atttatggta	aataggctct	taccacttgc	aaataactgg	180
ccacatcatt	aatgactgac	ttcccagtaa	ggctctctaa	ggggtaagta	ggaggatcca	240
caggatttga	gatgctaagg	ccccagagat	cgtttgatcc	aaccctctta	ttttcagagg	300
g						301

&lt;210&gt; 303

&lt;211&gt; 301

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 303

aggtaccaac	tgtggaaata	ggtagaggat	cattttttct	ttccatatca	actaagttgt	60
atattgtttt	ttgacagttt	aacacatctt	cttctgtcag	agattctttc	acaatagcac	120
tggctaattg	aactaccgct	tgcatgttaa	aaatgggtgt	ttgtgaaatg	atcataggcc	180
agtaacgggt	atgtttttct	aactgatctt	ttgctcgttc	caaagggacc	tcaagacttc	240
catcgatttt	atatctgggg	tctagaaaag	gagttaatct	gttttccttc	ataaattcac	300
c						301

&lt;210&gt; 304

&lt;211&gt; 301

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 304

acatggatgt	tattttgcag	actgtcaacc	tgaatttgta	tttgcttgac	attgcctaata	60
tattagtttc	agtttcagct	taccacattt	ttgtctgcaa	catgcaraas	agacagtgcc	120
cttttttagtg	tatcatatca	ggaatcatct	cacattgggt	tgtgccatta	ctgggtgcagt	180
gactttcagc	cacttgggta	aggtggagtt	ggccatatgt	ctccactgca	aaattactga	240
ttttcctttt	gtaattaata	agtgtgtgtg	tgaagattct	ttgagatgag	gtatatatct	300
c						301

&lt;210&gt; 305

&lt;211&gt; 301

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(301)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 305

gangtacagc	gtgggtcaagg	taacaagaag	aaaaaaatgt	gagtggcatc	ctgggatgag	60
cagggggaca	gacctggaca	gacacgttgt	catttgctgc	tgtgggtagg	aaaatgggag	120
taaaggagga	gaaacagata	caaaatctcc	aactcagtat	taaggatttc	tcatgcctag	180
aatattggta	gaaacaagaa	tacattcata	tggcaaataa	ctaaccatgg	tggaacaaaa	240
ttctgggatt	taagttggat	accaangaaa	ttgtattaaa	agagctgttc	atggaataag	300
a						301

&lt;210&gt; 306

&lt;211&gt; 8

&lt;212&gt; PRT

&lt;213&gt; Homo sapien

&lt;400&gt; 306

Val L u Gly Trp Val Ala Glu Leu

1

5

<210> 307  
 <211> 637  
 <212> DNA  
 <213> Homo sapien

<400> 307

acagggratg	aagggaag	gagaggatga	ggaagcccc	ctggggattt	ggtttggtcc	60
ttgtgatcag	gtggtctatg	gggcttatcc	ctacaaagaa	gaatccagaa	ataggggcac	120
attgaggaat	gatacttgag	cccaaagagc	attcaatcat	tgttttattt	gccttmtttt	180
cacaccattg	gtgagggagg	gattaccacc	ctgggggttat	gaagatggtt	gaacacccca	240
cacatagcac	cggagatatg	agatcaacag	tttcttagcc	atagagattc	acagcccaga	300
gcaggaggac	gcttgacac	catgcaggat	gacatggggg	atgcgctcgg	gattgggtgtg	360
aagaagcaag	gactgttaga	ggcaggcttt	atagtaacaa	gacggtgggg	caaactctga	420
tttccgtggg	ggaatgtcat	ggtcttgctt	tactaagttt	tgagactggc	aggtagtga	480
actcattagg	ctgagaacct	tgtggaatgc	acttgaccca	sctgatagag	gaagtagcca	540
ggtgggagcc	tttcccagtg	ggtgtgggac	atatctggca	agattttgtg	gcactcctgg	600
ttacagatac	tggggcagca	aataaaactg	aatcttg			637

<210> 308  
 <211> 647  
 <212> DNA  
 <213> Homo sapien

<220>

<221> misc\_feature

<222> (1)...(647)

<223> n = A,T,C or G

<400> 308

acgattttca	ttatcatgta	aatcgggtca	ctcaaggggc	caaccacagc	tgggagccac	60
tgctcagggg	aagggttcata	tgggactttc	tactgcccaa	ggttctatac	aggatataaa	120
ggngcctcac	agtatagatc	tggtagcaaa	gaagaagaaa	caaacactga	tctctttctg	180
ccacccctct	gacccttttg	aactcctctg	accctttaga	acaagcctac	ctaatactctg	240
ctagagaaaa	gaccaacaac	ggcctcaaag	gatctcttac	catgaaggtc	tcagctaatt	300
cttggtctaag	atgtgggttc	cacattaggt	tctgaatatg	gggggaaggg	tcaatttgct	360
cattttgtgt	gtggataaag	tcaggatgcc	caggggccag	agcagggggc	tgcttgcttt	420
gggaacaatg	gctgagcata	taaccatagg	ttatggggaa	caaaacaaca	tcaaagtcac	480
tgtatcaatt	gccatgaaga	cttgaggggac	ctgaatctac	cgattcatct	taaggcagca	540
ggaccagttt	gagtggcaac	aatgcagcag	cagaatcaat	ggaaacaaca	gaatgattgc	600
aatgtccttt	tttttctcct	gcttctgact	tgataaaagg	ggaccgt		647

<210> 309  
 <211> 460  
 <212> DNA  
 <213> Homo sapien

<400> 309

actttatagt	ttaggctgga	cattggaaaa	aaaaaaaaagc	cagaacaaca	tgtgatagat	60
aatatgattg	gctgcacact	tccagactga	tgaatgatga	acgtgatgga	ctattgtatg	120
gagcacatct	tcagcaagag	ggggaaatac	tcatcatttt	tggccagcag	ttgtttgatc	180
accaaacatc	atgccagaat	actcagcaaa	ccttcttagc	tcttgagaag	tcaaagtccg	240
ggggaattta	ttcctggcaa	ttttaattgg	actccttatg	tgagagcagc	ggctaccag	300
ctgggggtgg	tgagcgaacc	cgtcactagt	ggacatgcag	tggcagagct	cctggtaacc	360
acctagagga	atacacaggc	acatgtgtga	tgccaagcgt	gacacctgta	gcactcaaat	420
ttgtcttggt	tttgtctttc	ggtgtgtaag	attcttaagt			460

<210> 310  
 <211> 539  
 <212> DNA  
 <213> Homo sapi n

<400> 310  
 acgggactta tcaaataaag ataggaaaag aagaaaactc aaatattata ggcagaaatg 60  
 ctaaagggtt taaaatatgt caggattgga agaaggcatg gataaagaac aaagttcagt 120  
 taggaaagag aaacacagaa ggaagagaca caataaaagt cattatgtat tctgtgagaa 180  
 gtcagacagt aagattttgtg ggaaatgggt tggtttgttg tatggtatgt attttagcaa 240  
 taatctttat ggcagagaaa gctaaaatcc tttagcttgc gtgaatgatc acttgctgaa 300  
 ttcctcaagg taggcatgat gaaggagggt ttagaggaga cacagacaca atgaactgac 360  
 ctagatagaa agccttagta tactcagcta ggaatagtga ttctgagggc acactgtgac 420  
 atgattatgt cattacatgt atggtagtga tggggatgat aggaaggaag aacttatggc 480  
 atattttcac cccacaaaa gtcagttaaa tattgggaca ctaaccatcc aggtcaaga 539

<210> 311

<211> 526

<212> DNA

<213> Homo sapien

<220>

<221> misc\_feature

<222> (1)...(526)

<223> n = A,T,C or G

<400> 311  
 caaatttgag ccaatgacat agaattttac aaatcaagaa gcttattctg gggccatttc 60  
 ttttgacgtt ttctctaaac tactaaagag gcattaatga tccataaatt atattatcta 120  
 catttacagc atttaaaatg tggtcagcat gaaatattag ctacagggga agctaaataa 180  
 attaaacatg gaataaagat ttgtccttaa atataatcta caagaagact ttgatatttg 240  
 tttttcacaa gtgaagcatt cttataaagt gtcataacct ttttggggaa actatgggaa 300  
 aaaatgggga aactctgaag gggttttaagt atcttacctg aagctacaga ctccataacc 360  
 tctctttaca gggagctcct gcagccccta cagaaatgag tggctgagat tcttgattgc 420  
 acagcaagag cttctcatct aaacccttcc cctttttagt atctgtgtat caagtataaa 480  
 agttctataa actgtagtnt acttatttta atccccaaag cacagt 526

<210> 312

<211> 500

<212> DNA

<213> Homo sapien

<220>

<221> misc\_feature

<222> (1)...(500)

<223> n = A,T,C or G

<400> 312  
 cctctctctc cccaccccct gactctagag aactgggttt tctcccagta ctccagcaat 60  
 tcatttctga aagcagttga gccactttat tccaaagtac actgcagatg ttcaaactct 120  
 ccatttctct ttcccttcca cctgccagtt ttgctgactc tcaacttgct atgagtgtaa 180  
 gcattaagga cattatgctt cttcgattct gaagacaggc cctgctcatg gatgactctg 240  
 gcttcttagg aaaatatattt tcttccaaaa tcagtaggaa atctaaactt atcccctctt 300  
 tgcagatgtc tagcagcttc agacatttgg ttaagaacct atgggaaaaa aaaaaatcct 360  
 tgctaagtgt gtttcctttg taaaccanga ttcttatttg nctggatatag aatatcagct 420  
 ctgaacgtgt ggtaaagatt tttgtgtttg aatataggag aaatcagttt gctgaaaagt 480  
 tagtcttaat tatctatttg

<210> 313

<211> 718

<212> DNA

<213> Homo sapien

<220>

<221> misc\_feature

<222> (1)...(718)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 313

ggagatttgt	gtggtttgca	gccgagggag	accaggaaga	tctgcatggt	gggaaggacc	60
tgatgataca	gaggtgagaa	ataagaaagg	ctgctgactt	taccatctga	ggccacacat	120
ctgctgaaat	ggagataatt	aacatcacta	gaaacagcaa	gatgacaata	taatgtctaa	180
gtagtgcacat	gtttttgcac	atttccagcc	cttttaaata	tccacacaca	caggaagcac	240
aaaaggaagc	acagagatcc	ctgggagaaa	tgcccggccg	ccatcttggg	tcacgatga	300
gcctcgccct	gtgcctgntc	ccgcttgtga	gggaaggaca	ttagaaaatg	aattgatgtg	360
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cgttatacca	atcatttcta	tttctaccct	caaacaagct	gtngaatac	tgacttacgg	660
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&lt;210&gt; 314

&lt;211&gt; 358

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 314

gtttattttac	attacagaaa	aaacatcaag	acaatgtata	ctattttcaaa	tatatccata	60
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caacatgtgt	agatctcttg	tcttattctt	ttgtctataa	tactgtattg	tgtagtccaa	180
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&lt;210&gt; 315

&lt;211&gt; 341

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 315

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agtcaccagc	tccccgacca	gccggatatc	gtccttaggg	gtcatgtagg	cttcctgaag	240
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&lt;210&gt; 316

&lt;211&gt; 151

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 316

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cattcaggga	gctctggttg	caatattagt	t			151

&lt;210&gt; 317

&lt;211&gt; 151

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 317

agaactagt	gatcctaag	aaatacctga	aacatatatt	ggcatttatc	aatggctcaa	60
atcttcattt	atctctggcc	ttaaccctgg	ctcctgaggc	tgcggccagc	agatcccagg	120
ccagggctct	gttcttgcca	cacctgcttg	a			151



<210> 318  
<211> 151  
<212> DNA  
<213> Homo sapien

<400> 318  
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gctgcaggct ggagtgtctt ttttcctggc gggagaccgc acattccact gctgaggctg 120  
tgggggcggt ttatcaggca gtgataaaca t 151

<210> 319  
<211> 151  
<212> DNA  
<213> Homo sapien

<400> 319  
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<210> 320  
<211> 150  
<212> DNA  
<213> Homo sapien

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gagtgttcta cagcttacag taaataccat 150

<210> 321  
<211> 151  
<212> DNA  
<213> Homo sapien

<400> 321  
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tgcctctgag aaatcaaagt cttcatacac t 151

<210> 322  
<211> 151  
<212> DNA  
<213> Homo sapien

<220>  
<221> misc\_feature  
<222> (1)...(151)  
<223> n = A,T,C or G

<400> 322  
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attgtgcagg gctcgttca nacttcag t 151

<210> 323  
<211> 151  
<212> DNA  
<213> Homo sapien

<220>  
<221> misc\_feature

&lt;222&gt; (1)...(151)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 323

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gttcaatyaa	aaagacactt	ancccatgtg	g			151

&lt;210&gt; 324

&lt;211&gt; 461

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(461)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 324

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&lt;210&gt; 325

&lt;211&gt; 400

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 325

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&lt;210&gt; 326

&lt;211&gt; 1215

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 326

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97

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aaaaaaaaaa aaaaaa 1215

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<210> 327  
 <211> 220  
 <212> PRT  
 <213> Homo sapien

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<400> 327
Glu Asp Cys Ser Pro His Ser Gln Pro Trp Gln Ala Ala Leu Val Met
1      5      10      15
Glu Asn Glu Leu Phe Cys Ser Gly Val Leu Val His Pro Gln Trp Val
20     25     30
Leu Ser Ala Ala His Cys Phe Gln Asn Ser Tyr Thr Ile Gly Leu Gly
35     40     45
Leu His Ser Leu Glu Ala Asp Gln Glu Pro Gly Ser Gln Met Val Glu
50     55     60
Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Pro Leu Leu Ala
65     70     75     80
Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser Glu Ser Asp
85     90     95
Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr Ala Gly Asn
100    105    110
Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Gly Arg Met Pro
115    120    125
Thr Val Leu Gln Cys Val Asn Val Ser Val Val Ser Glu Glu Val Cys
130    135    140
Ser Lys Leu Tyr Asp Pro Leu Tyr His Pro Ser Met Phe Cys Ala Gly
145    150    155    160
Gly Gly Gln Asp Gln Lys Asp Ser Cys Asn Gly Asp Ser Gly Gly Pro
165    170    175
Leu Ile Cys Asn Gly Tyr Leu Gln Gly Leu Val Ser Phe Gly Lys Ala
180    185    190
Pro Cys Gly Gln Val Gly Val Pro Gly Val Tyr Thr Asn Leu Cys Lys
195    200    205
Phe Thr Glu Trp Ile Glu Lys Thr Val Gln Ala Ser
210    215    220

```

<210> 328  
 <211> 234  
 <212> DNA  
 <213> Homo sapien

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<400> 328
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atccgcagtg ggtgctgtca gccacacact gtttccagaa ctcctacacc atcgggctgg 180
gcctgcacag tcttgaggcc gaccaagagc cagggagcca gatggtggag gcca 234

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<210> 329  
 <211> 77  
 <212> PRT  
 <213> Homo sapien

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<400> 329
Leu Val Ser Gly Ser Cys Ser Gln Ile Ile Asn Gly Glu Asp Cys Ser
1      5      10      15

```

Pro His Ser Gln Pro Trp Gln Ala Ala Leu Val Met Glu Asn Glu Leu  
                   20                  25                  30  
 Phe Cys Ser Gly Val Leu Val His Pro Gln Trp Val Leu Ser Ala Thr  
                   35                  40                  45  
 His Cys Phe Gln Asn Ser Tyr Thr Ile Gly Leu Gly Leu His Ser Leu  
           50                  55                  60  
 Glu Ala Asp Gln Glu Pro Gly Ser Gln Met Val Glu Ala  
 65                  70                  75

<210> 330  
 <211> 70  
 <212> DNA  
 <213> Homo sapien

<400> 330  
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 gctgcagcca 70

<210> 331  
 <211> 22  
 <212> PRT  
 <213> Homo sapien

<400> 331  
 Gln His Asn Gly Pro Ile Pro Ser Leu Thr Pro Pro Ser Gly Ser Leu  
   1                  5                  10                  15  
 Val Ser Gly Ser Cys Ser  
                   20

<210> 332  
 <211> 2507  
 <212> DNA  
 <213> Homo sapien

<400> 332  
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 <211> 3030  
 <212> DNA  
 <213> Homo sapien

<400> 333

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&lt;210&gt; 334

&lt;211&gt; 2417

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 334

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&lt;210&gt; 335

&lt;211&gt; 2984

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 335

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&lt;210&gt; 336

&lt;211&gt; 147

&lt;212&gt; PRT

&lt;213&gt; Homo sapien

&lt;400&gt; 336

Pro Ser Phe Pro Thr Leu Leu Ser Arg Arg His Leu Gly Ser Tyr Leu

102

```

1           5           10           15
Leu Asp Ser Glu Asn Thr Ser Gly Ala Leu Pro Arg Leu Pro Gln Thr
20          25          30
Pro Lys Gln Pro Gln Lys Arg Ser Arg Ala Ala Phe Ser His Thr Gln
35          40          45
Val Ile Glu Leu Glu Arg Lys Phe Ser His Gln Lys Tyr Leu Ser Ala
50          55          60
Pro Glu Arg Ala His Leu Ala Lys Asn Leu Lys Leu Thr Glu Thr Gln
65          70          75          80
Val Lys Ile Trp Phe Gln Asn Arg Arg Tyr Lys Thr Lys Arg Lys Gln
85          90          95
Leu Ser Ser Glu Leu Gly Asp Leu Glu Lys His Ser Ser Leu Pro Ala
100         105         110
Leu Lys Glu Glu Ala Phe Ser Arg Ala Ser Leu Val Ser Val Tyr Asn
115         120         125
Ser Tyr Pro Tyr Tyr Pro Tyr Leu Tyr Cys Val Gly Ser Trp Ser Pro
130         135         140
Ala Phe Trp
145

```

```

<210> 337
<211> 9
<212> PRT
<213> Homo sapien

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```

<400> 337
Ala Leu Thr Gly Phe Thr Phe Ser Ala
1           5

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```

<210> 338
<211> 9
<212> PRT
<213> Homo sapien

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<400> 338
Leu Leu Ala Asn Asp Leu Met Leu Ile
1           5

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<210> 339
<211> 318
<212> PRT
<213> Homo sapien

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<400> 339
Met Val Glu Leu Met Phe Pro Leu Leu Leu Leu Leu Leu Pro Phe Leu
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Leu Tyr Met Ala Ala Pro Gln Ile Arg Lys Met Leu Ser Ser Gly Val
20          25          30
Cys Thr Ser Thr Val Gln Leu Pro Gly Lys Val Val Val Val Thr Gly
35          40          45
Ala Asn Thr Gly Ile Gly Lys Glu Thr Ala Lys Glu Leu Ala Gln Arg
50          55          60
Gly Ala Arg Val Tyr Leu Ala Cys Arg Asp Val Glu Lys Gly Glu Leu
65          70          75          80
Val Ala Lys Glu Ile Gln Thr Thr Thr Gly Asn Gln Gln Val Leu Val
85          90          95
Arg Lys Leu Asp Leu Ser Asp Thr Lys Ser Ile Arg Ala Phe Ala Lys
100         105         110
Gly Phe Leu Ala Glu Glu Lys His Leu His Val Leu Ile Asn Asn Ala
115         120         125
Gly Val Met Met Cys Pro Tyr Ser Lys Thr Ala Asp Gly Phe Glu Met

```



130	135	140
His Ile Gly Val Asn	His Leu Gly His Phe Leu	Leu Thr His Leu Leu
145	150	155
Leu Glu Lys Leu Lys	Glu Ser Ala Pro Ser Arg	Ile Val Asn Val Ser
165	170	175
Ser Leu Ala His	Leu Gly Arg Ile His Phe	His Asn Leu Gln Gly
180	185	190
Glu Lys Phe Tyr Asn	Ala Gly Leu Ala Tyr Cys	His Ser Lys Leu Ala
195	200	205
Asn Ile Leu Phe Thr	Gln Glu Leu Ala Arg Arg	Leu Lys Gly Ser Gly
210	215	220
Val Thr Thr Tyr Ser	Val His Pro Gly Thr Val	Gln Ser Glu Leu Val
225	230	235
Arg His Ser Ser Phe	Met Arg Trp Met Trp Trp	Leu Phe Ser Phe Phe
245	250	255
Ile Lys Thr Pro Gln	Gln Gly Ala Gln Thr Ser	Leu His Cys Ala Leu
260	265	270
Thr Glu Gly Leu Glu	Ile Leu Ser Gly Asn His	Phe Ser Asp Cys His
275	280	285
Val Ala Trp Val Ser	Ala Gln Ala Arg Asn Glu	Thr Ile Ala Arg Arg
290	295	300
Leu Trp Asp Val Ser	Cys Asp Leu Leu Gly Leu	Pro Ile Asp
305	310	315

<210> 340  
 <211> 483  
 <212> DNA  
 <213> Homo sapien

<400> 340

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ctg						483

<210> 341  
 <211> 344  
 <212> DNA  
 <213> Homo sapien

<400> 341

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attaatttaa	taattttctga	tgatgggttt	atctgcagta	atatgtatat	catctattag	240
aatttactta	atgaaaaact	gaagagaaca	aaatttgtaa	ccactagcac	ttaagtactc	300
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<210> 342  
 <211> 592  
 <212> DNA  
 <213> Homo sapien

<400> 342

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cctggcaggt	aaaccaatgc	caagagagtg	atggaaacca	ttggcaagac	tttgttgatg	180

104

accaggattg	gaattttata	aaaatattgt	tgatgggaag	ttgctaaagg	gtgaattact	240
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tcagcatggg	ctgtttggtg	caaatgcaaa	agcacaggtc	tttttagcat	gctggctctt	420
cccgtgtcct	tatgcaaata	atcgtcttct	tctaaatttc	tcctaggctt	cattttccaa	480
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&lt;210&gt; 343

&lt;211&gt; 382

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 343

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&lt;210&gt; 344

&lt;211&gt; 536

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 344

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&lt;210&gt; 345

&lt;211&gt; 251

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 345

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aaataacata	tcggatttgg	agagacactg	ccaactggct	ggagattaat	ccggacactg	240
gtgccatttc	c					251

&lt;210&gt; 346

&lt;211&gt; 282

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(282)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 346

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&lt;210&gt; 347

&lt;211&gt; 201

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(201)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 347

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tataaagaat	ttttttttgt	c				201

&lt;210&gt; 348

&lt;211&gt; 251

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 348

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gcctgcctc	c					251

&lt;210&gt; 349

&lt;211&gt; 251

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 349

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&lt;210&gt; 350

&lt;211&gt; 908

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 350

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106

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 <211> 472  
 <212> DNA  
 <213> Homo sapien

<400> 351						
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 <212> DNA  
 <213> Homo sapien

<400> 352						
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aataagcaca	a					251

<210> 353  
 <211> 436  
 <212> DNA  
 <213> Homo sapien

<400> 353						
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 <211> 854  
 <212> DNA  
 <213> Homo sapien

<400> 354						
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<210> 355  
 <211> 676  
 <212> DNA  
 <213> Homo sapien

<400> 355						
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gtgactttcc	cacggccaaa	aagctgttca	cacctcacgc	acctctgtgc	ctcagtttgc	420
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<210> 356  
 <211> 574  
 <212> DNA  
 <213> Homo sapien

<400> 356						
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caagcttccc	attttagat	ctcagtgcct	atgagtatct	gacacctgtt	cctctcttca	180
gtctcttagg	gaggcttaaa	tctgtctcag	gtgtgctaag	agtgccagcc	caaggkggtc	240
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<210> 357  
 <211> 393  
 <212> DNA  
 <213> Homo sapien

<400> 357						
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aagccacaac	caaracttga	ttttatcaac	aaaaaccct	aaatataaac	ggsaaaaaac	180
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gcataatctg	tacaaaatta	aactgtcctt	tttggcattt	taacaaattt	gcaacgktct	360
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<210> 358  
 <211> 630  
 <212> DNA  
 <213> Homo sapien

&lt;400&gt; 358

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gcatagagta	gggaagctaa	tccagcacag	ggaggtcaca	gagacatccc	taaggaagtg	180
gagtttaaac	tgagagaagc	aagtgcctaa	actgaaggat	gtgttgaaga	agaagggaga	240
gtagaacaat	ttgggcagag	ggaaccttat	agaccctaag	gtgggaaggt	tcaaagaact	300
gaaagagagc	tagaacagct	ggagccgttc	tccggtgtaa	agaggagtca	aagagataag	360
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caagccagag	gttcctccac	aacaaccagt				630

&lt;210&gt; 359

&lt;211&gt; 620

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 359

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ctcaccagaa	gaataaaagt	ctctgccagt	tattaaagga	ttactgctgg	tgaattaaat	180
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aacaaaaagc	tcacaccaaa	caaaaccatc	aacttatttt	gtattctata	acatacgaga	600
ctgtaaagat	gtgacagtgt					620

&lt;210&gt; 360

&lt;211&gt; 431

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 360

aaaaaaaaaa	agccagaaca	acatgtgata	gataatatga	ttggctgcac	acttccagac	60
tgatgaatga	tgaacgtgat	ggactattgt	atggagcaca	tcttcagcaa	gagggggaaa	120
tactcatcat	ttttggccag	cagttgtttg	atcaccaaac	atcatgccag	aatactcagc	180
aaaccttctt	agctcttgag	aagtcaaagt	ccgggggaat	ttattcctgg	caattttaat	240
tggaactcct	atgtgagagc	agcggctacc	cagctggggg	ggtggagcga	acccgtcact	300
agtggacatg	cagtggcaga	gctcctggta	accacctaga	ggaatacaca	ggcacatgtg	360
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agattccttag	t					431

&lt;210&gt; 361

&lt;211&gt; 351

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 361

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&lt;210&gt; 362

&lt;211&gt; 463

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 362

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&lt;210&gt; 363

&lt;211&gt; 653

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(653)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 363

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&lt;210&gt; 364

&lt;211&gt; 401

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 364

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&lt;210&gt; 365

&lt;211&gt; 356

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 365

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110

<210> 366  
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<212> DNA  
<213> Homo sapien

<400> 366  
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aagatacatc aacattttgc tcaagtagag ggctgactat acttgctgat ccacaacata 360  
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tgattaaaaa tttcaccact tgctgttttt gctcatgtat accaagtagc agtgggtgtga 480  
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<210> 367  
<211> 668  
<212> DNA  
<213> Homo sapien

<400> 367  
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<210> 368  
<211> 1512  
<212> DNA  
<213> Homo sapien



&lt;400&gt; 368

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&lt;210&gt; 369

&lt;211&gt; 1853

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 369

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112

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 <211> 2184  
 <212> DNA  
 <213> Homo sapien

<400> 370

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 <212> DNA  
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&lt;210&gt; 372

&lt;211&gt; 1059

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 372

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&lt;210&gt; 373

&lt;211&gt; 1155

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 373

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&lt;211&gt; 2000

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 374

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<400> 375

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agcaacgtgg	gcacttctgg	agaccacgac	gactctgcta	tgaagacact	caggagcaag	180
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ggcgcttctg	gagaccacga	cgactctgct	atgaagacac	tcaggaacaa	gatgggcaag	300
tggtgctgcc	actgcttccc	ctgctgcagg	gggagcggca	agagcaaggt	gggcgcttgg	360
ggagactacg	atgacagtgc	cttcatggag	cccaggtacc	acgtccgtgg	agaagatctg	420
gacaagctcc	acagagctgc	ctggtggggg	aaagtcccca	gaaaggatct	catcgctcatg	480
ctcagggaca	ctgacgtgaa	caagaaggac	aagcaaaaaga	ggactgctct	acatctggcc	540
tctgccaatg	ggaattcaga	agtagtaaaa	ctcctgctgg	acagacgatg	tcaacttaat	600
gtccttgaca	acaaaaagag	gacagctctg	ataaaggccg	tacaatgcca	ggaagatgaa	660
tgtgcgttaa	tggtgctgga	acatggcact	gatccaaata	ttccagatga	gtatggaaat	720
accactctgc	actacgctat	ctataatgaa	gataaattaa	tggccaaagc	actgctctta	780
tatggtgctg	atatcgaatc	aaaaaacaag	catggcctca	caccactgtt	acttgggtgta	840
catgagcaaa	aacagcaagt	cgtgaaattt	ttaatcaaga	aaaaagcgaa	tttaaatgca	900
ctggatagat	atggaaggac	tgctctcata	cttgcgtgat	gttgtggatc	agcaagtata	960
gtcagccttc	tacttgagca	aaatattgat	gtatcttctc	aagatctatc	tggacagacg	1020
gccagagagt	atgctgtttc	tagtcatcat	catgtaattt	gccagttact	ttctgactac	1080
aaagaaaaac	agatgctaaa	aatctcttct	gaaaacagca	atccagaaca	agacttaaaag	1140
ctgacatcag	aggaagagtc	acaaagggtc	aaaggcagtg	aaaatagcca	gccagagaaa	1200
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cctgacaacg	aaagtgaaga	gtatcacaga	atltgccaat	tagtttctga	ctacaaagaa	1440
aaacagatgc	caaaatactc	ttctgaaaac	agcaaccacg	aacaagactt	aaagctgaca	1500
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caagaaccag	aaataaataa	ggatggtgat	agagagctag	aaaattttat	ggctatcgaa	1620
gaaatgaaga	agcacggaag	tactcatgtc	ggattcccag	aaaacctgac	taatggtgcc	1680
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cagcaatttc	ctgacactga	gaatgaagag	tatcacagtg	acgaacaaaa	tgatactcag	1800
aagcaatttt	gtgaagaaca	gaacactgga	atattacacg	atgagattct	gattcatgaa	1860
gaaaagcaga	tagaagtggg	tgaaaaaatg	aattctgagc	tttctcttag	ttgtaagaaa	1920
gaaaaagaca	tcttgcatga	aaatagtacg	ttgcgggaag	aaattgccat	gctaagactg	1980
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<210> 376  
 <211> 329  
 <212> PRT  
 <213> Homo sapien

<400> 376

Met	Asp	Ile	Val	Val	Ser	Gly	Ser	His	Pro	Leu	Trp	Val	Asp	Ser	Phe
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			20					25					30		
Glu	Tyr	Thr	Ile	Val	His	Ala	Ser	Phe	Ile	Ser	Cys	Ile	Ser	Ser	Ser
		35					40					45			
Leu	Asp	Gly	Gln	Gly	Glu	Arg	Gln	Glu	Gln	Arg	Gly	His	Phe	Trp	Arg
	50					55					60				
Pro	Gln	Arg	Leu	Leu	Cys	Glu	Asp	Ala	Trp	Glu	Gln	Glu	Val	Gln	Val
65					70					75				80	
Val	Leu	Pro	Leu	Leu	Pro	Leu	Leu	Gln	Gly	Ser	Gly	Lys	Ser	Asn	Val
			85					90						95	
Val	Ala	Trp	Gly	Asp	Tyr	Asp	Asp	Ser	Ala	Phe	Met	Asp	Pro	Arg	Tyr
			100					105					110		
His	Val	His	Gly	Glu	Asp	Leu	Asp	Lys	Leu	His	Arg	Ala	Ala	Trp	Trp
			115				120					125			

116

Gly Lys Val Pro Arg Lys Asp Leu Ile Val Met Leu Arg Asp Thr Asp  
 130 135 140  
 Val Asn Lys Arg Asp Lys Gln Lys Arg Thr Ala Leu His Leu Ala Ser  
 145 150 155 160  
 Ala Asn Gly Asn Ser Glu Val Val Lys Leu Val Leu Asp Arg Arg Cys  
 165 170 175  
 Gln Leu Asn Val Leu Asp Asn Lys Lys Arg Thr Ala Leu Thr Lys Ala  
 180 185 190  
 Val Gln Cys Gln Glu Asp Glu Cys Ala Leu Met Leu Leu Glu His Gly  
 195 200 205  
 Thr Asp Pro Asn Ile Pro Asp Glu Tyr Gly Asn Thr Thr Leu His Tyr  
 210 215 220  
 Ala Val Tyr Asn Glu Asp Lys Leu Met Ala Lys Ala Leu Leu Leu Tyr  
 225 230 235 240  
 Gly Ala Asp Ile Glu Ser Lys Asn Lys His Gly Leu Thr Pro Leu Leu  
 245 250 255  
 Leu Gly Ile His Glu Gln Lys Gln Gln Val Val Lys Phe Leu Ile Lys  
 260 265 270  
 Lys Lys Ala Asn Leu Asn Ala Leu Asp Arg Tyr Gly Arg Thr Ala Leu  
 275 280 285  
 Ile Leu Ala Val Cys Cys Gly Ser Ala Ser Ile Val Ser Pro Leu Leu  
 290 295 300  
 Glu Gln Asn Val Asp Val Ser Ser Gln Asp Leu Glu Arg Arg Pro Glu  
 305 310 315 320  
 Ser Met Leu Phe Leu Val Ile Ile Met  
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<210> 377  
 <211> 148  
 <212> PRT  
 <213> Homo sapien

<220>  
 <221> VARIANT  
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<400> 377  
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 Trp Thr Ser Ser Thr Glu Leu Pro Trp Trp Gly Lys Val Pro Arg Lys  
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 Asp Leu Ile Val Met Leu Arg Asp Thr Asp Val Asn Lys Xaa Asp Lys  
 35 40 45  
 Gln Lys Arg Thr Ala Leu His Leu Ala Ser Ala Asn Gly Asn Ser Glu  
 50 55 60  
 Val Val Lys Leu Xaa Leu Asp Arg Arg Cys Gln Leu Asn Val Leu Asp  
 65 70 75 80  
 Asn Lys Lys Arg Thr Ala Leu Xaa Lys Ala Val Gln Cys Gln Glu Asp  
 85 90 95  
 Glu Cys Ala Leu Met Leu Leu Glu His Gly Thr Asp Pro Asn Ile Pro  
 100 105 110  
 Asp Glu Tyr Gly Asn Thr Thr Leu His Tyr Ala Xaa Tyr Asn Glu Asp  
 115 120 125  
 Lys Leu Met Ala Lys Ala Leu Leu Tyr Gly Ala Asp Ile Glu Ser  
 130 135 140  
 Lys Asn Lys Val  
 145

<210> 378  
 <211> 1719  
 <212> PRT

&lt;213&gt; Homo sapien

&lt;400&gt; 378

Met	Val	Val	Glu	Val	Asp	Ser	Met	Pro	Ala	Ala	Ser	Ser	Val	Lys	Lys
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Pro	Phe	Gly	Leu	Arg	Ser	Lys	Met	Gly	Lys	Trp	Cys	Cys	Arg	Cys	Phe
			20					25					30		
Pro	Cys	Cys	Arg	Glu	Ser	Gly	Lys	Ser	Asn	Val	Gly	Thr	Ser	Gly	Asp
		35					40					45			
His	Asp	Asp	Ser	Ala	Met	Lys	Thr	Leu	Arg	Ser	Lys	Met	Gly	Lys	Trp
	50					55					60				
Cys	Arg	His	Cys	Phe	Pro	Cys	Cys	Arg	Gly	Ser	Gly	Lys	Ser	Asn	Val
65					70					75				80	
Gly	Ala	Ser	Gly	Asp	His	Asp	Asp	Ser	Ala	Met	Lys	Thr	Leu	Arg	Asn
				85					90					95	
Lys	Met	Gly	Lys	Trp	Cys	Cys	His	Cys	Phe	Pro	Cys	Cys	Arg	Gly	Ser
			100					105					110		
Gly	Lys	Ser	Lys	Val	Gly	Ala	Trp	Gly	Asp	Tyr	Asp	Asp	Ser	Ala	Phe
		115					120					125			
Met	Glu	Pro	Arg	Tyr	His	Val	Arg	Gly	Glu	Asp	Leu	Asp	Lys	Leu	His
	130					135					140				
Arg	Ala	Ala	Trp	Trp	Gly	Lys	Val	Pro	Arg	Lys	Asp	Leu	Ile	Val	Met
145					150					155				160	
Leu	Arg	Asp	Thr	Asp	Val	Asn	Lys	Lys	Asp	Lys	Gln	Lys	Arg	Thr	Ala
				165					170					175	
Leu	His	Leu	Ala	Ser	Ala	Asn	Gly	Asn	Ser	Glu	Val	Val	Lys	Leu	Leu
			180				185						190		
Leu	Asp	Arg	Arg	Cys	Gln	Leu	Asn	Val	Leu	Asp	Asn	Lys	Lys	Arg	Thr
	195						200					205			
Ala	Leu	Ile	Lys	Ala	Val	Gln	Cys	Gln	Glu	Asp	Glu	Cys	Ala	Leu	Met
	210					215					220				
Leu	Leu	Glu	His	Gly	Thr	Asp	Pro	Asn	Ile	Pro	Asp	Glu	Tyr	Gly	Asn
225					230					235				240	
Thr	Thr	Leu	His	Tyr	Ala	Ile	Tyr	Asn	Glu	Asp	Lys	Leu	Met	Ala	Lys
				245					250					255	
Ala	Leu	Leu	Leu	Tyr	Gly	Ala	Asp	Ile	Glu	Ser	Lys	Asn	Lys	His	Gly
			260				265						270		
Leu	Thr	Pro	Leu	Leu	Leu	Gly	Val	His	Glu	Gln	Lys	Gln	Gln	Val	Val
		275				280						285			
Lys	Phe	Leu	Ile	Lys	Lys	Lys	Ala	Asn	Leu	Asn	Ala	Leu	Asp	Arg	Tyr
	290					295					300				
Gly	Arg	Thr	Ala	Leu	Ile	Leu	Ala	Val	Cys	Cys	Gly	Ser	Ala	Ser	Ile
305					310					315				320	
Val	Ser	Leu	Leu	Leu	Glu	Gln	Asn	Ile	Asp	Val	Ser	Ser	Gln	Asp	Leu
				325					330					335	
Ser	Gly	Gln	Thr	Ala	Arg	Glu	Tyr	Ala	Val	Ser	Ser	His	His	His	Val
			340				345						350		
Ile	Cys	Gln	Leu	Leu	Ser	Asp	Tyr	Lys	Glu	Lys	Gln	Met	Leu	Lys	Ile
		355				360						365			
Ser	Ser	Glu	Asn	Ser	Asn	Pro	Glu	Asn	Val	Ser	Arg	Thr	Arg	Asn	Lys
	370				375						380				
Pro	Arg	Thr	His	Met	Val	Val	Glu	Val	Asp	Ser	Met	Pro	Ala	Ala	Ser
385					390					395				400	
Ser	Val	Lys	Lys	Pro	Phe	Gly	Leu	Arg	Ser	Lys	Met	Gly	Lys	Trp	Cys
				405					410					415	
Cys	Arg	Cys	Phe	Pro	Cys	Cys	Arg	Glu	Ser	Gly	Lys	Ser	Asn	Val	Gly
			420				425						430		
Thr	Ser	Gly	Asp	His	Asp	Asp	Ser	Ala	Met	Lys	Thr	Leu	Arg	Ser	Lys
		435				440						445			
Met	Gly	Lys	Trp	Cys	Arg	His	Cys	Phe	Pro	Cys	Cys	Arg	Gly	Ser	Gly
	450					455					460				
Lys	Ser	Asn	Val	Gly	Ala	Ser	Gly	Asp	His	Asp	Asp	Ser	Ala	Met	Lys

465					470					475				480
Thr	Leu	Arg	Asn	Lys	Met	Gly	Lys	Trp	Cys	Cys	His	Cys	Phe	Pro Cys
				485					490					495
Cys	Arg	Gly	Ser	Gly	Lys	Ser	Lys	Val	Gly	Ala	Trp	Gly	Asp	Tyr Asp
			500					505					510	
Asp	Ser	Ala	Phe	Met	Glu	Pro	Arg	Tyr	His	Val	Arg	Gly	Glu	Asp Leu
		515					520					525		
Asp	Lys	Leu	His	Arg	Ala	Ala	Trp	Trp	Gly	Lys	Val	Pro	Arg	Lys Asp
	530						535				540			
Leu	Ile	Val	Met	Leu	Arg	Asp	Thr	Asp	Val	Asn	Lys	Lys	Asp	Lys Gln
545					550					555				560
Lys	Arg	Thr	Ala	Leu	His	Leu	Ala	Ser	Ala	Asn	Gly	Asn	Ser	Glu Val
			565						570					575
Val	Lys	Leu	Leu	Leu	Asp	Arg	Arg	Cys	Gln	Leu	Asn	Val	Leu	Asp Asn
			580					585					590	
Lys	Lys	Arg	Thr	Ala	Leu	Ile	Lys	Ala	Val	Gln	Cys	Gln	Glu	Asp Glu
		595					600					605		
Cys	Ala	Leu	Met	Leu	Leu	Glu	His	Gly	Thr	Asp	Pro	Asn	Ile	Pro Asp
	610					615					620			
Glu	Tyr	Gly	Asn	Thr	Thr	Leu	His	Tyr	Ala	Ile	Tyr	Asn	Glu	Asp Lys
625					630					635				640
Leu	Met	Ala	Lys	Ala	Leu	Leu	Leu	Tyr	Gly	Ala	Asp	Ile	Glu	Ser Lys
			645						650					655
Asn	Lys	His	Gly	Leu	Thr	Pro	Leu	Leu	Leu	Gly	Val	His	Glu	Gln Lys
			660				665						670	
Gln	Gln	Val	Val	Lys	Phe	Leu	Ile	Lys	Lys	Lys	Ala	Asn	Leu	Asn Ala
		675					680					685		
Leu	Asp	Arg	Tyr	Gly	Arg	Thr	Ala	Leu	Ile	Leu	Ala	Val	Cys	Cys Gly
	690				695					700				
Ser	Ala	Ser	Ile	Val	Ser	Leu	Leu	Leu	Glu	Gln	Asn	Ile	Asp	Val Ser
705					710					715				720
Ser	Gln	Asp	Leu	Ser	Gly	Gln	Thr	Ala	Arg	Glu	Tyr	Ala	Val	Ser Ser
			725						730					735
His	His	His	Val	Ile	Cys	Gln	Leu	Leu	Ser	Asp	Tyr	Lys	Glu	Lys Gln
			740				745						750	
Met	Leu	Lys	Ile	Ser	Ser	Glu	Asn	Ser	Asn	Pro	Glu	Gln	Asp	Leu Lys
		755					760					765		
Leu	Thr	Ser	Glu	Glu	Glu	Ser	Gln	Arg	Phe	Lys	Gly	Ser	Glu	Asn Ser
	770					775					780			
Gln	Pro	Glu	Lys	Met	Ser	Gln	Glu	Pro	Glu	Ile	Asn	Lys	Asp	Gly Asp
785					790					795				800
Arg	Glu	Val	Glu	Glu	Glu	Met	Lys	Lys	His	Glu	Ser	Asn	Asn	Val Gly
			805						810					815
Leu	Leu	Glu	Asn	Leu	Thr	Asn	Gly	Val	Thr	Ala	Gly	Asn	Gly	Asp Asn
			820				825						830	
Gly	Leu	Ile	Pro	Gln	Arg	Lys	Ser	Arg	Thr	Pro	Glu	Asn	Gln	Gln Phe
	835						840					845		
Pro	Asp	Asn	Glu	Ser	Glu	Glu	Tyr	His	Arg	Ile	Cys	Glu	Leu	Val Ser
	850					855					860			
Asp	Tyr	Lys	Glu	Lys	Gln	Met	Pro	Lys	Tyr	Ser	Ser	Glu	Asn	Ser Asn
865					870					875				880
Pro	Glu	Gln	Asp	Leu	Lys	Leu	Thr	Ser	Glu	Glu	Glu	Ser	Gln	Arg Leu
			885						890					895
Glu	Gly	Ser	Glu	Asn	Gly	Gln	Pro	Glu	Leu	Glu	Asn	Phe	Met	Ala Ile
		900					905						910	
Glu	Glu	Met	Lys	Lys	His	Gly	Ser	Thr	His	Val	Gly	Phe	Pro	Glu Asn
		915					920					925		
Leu	Thr	Asn	Gly	Ala	Thr	Ala	Gly	Asn	Gly	Asp	Asp	Gly	Leu	Ile Pro
	930					935					940			
Pro	Arg	Lys	Ser	Arg	Thr	Pro	Glu	Ser	Gln	Gln	Phe	Pro	Asp	Thr Glu
945					950					955				960
Asn	Glu	Glu	Tyr	His	Ser	Asp	Glu	Gln	Asn	Asp	Thr	Gln	Lys	Gln Phe



															965																970																975
Cys	Glu	Glu	Gln	Asn	Thr	Gly	Ile	Leu	His	Asp	Glu	Ile	Leu	Ile	His																																
															980																985																990
Glu	Glu	Lys	Gln	Ile	Glu	Val	Val	Glu	Lys	Met	Asn	Ser	Glu	Leu	Ser																																
															995																1000																1005
Leu	Ser	Cys	Lys	Lys	Glu	Lys	Asp	Ile	Leu	His	Glu	Asn	Ser	Thr	Leu																																
															1010																1015																1020
Arg	Glu	Glu	Ile	Ala	Met	Leu	Arg	Leu	Glu	Leu	Asp	Thr	Met	Lys	His																																
															1025																1030																1035
Gln	Ser	Gln	Leu	Pro	Arg	Thr	His	Met	Val	Val	Glu	Val	Asp	Ser	Met																																
															1045																1050																1055
Pro	Ala	Ala	Ser	Ser	Val	Lys	Lys	Pro	Phe	Gly	Leu	Arg	Ser	Lys	Met																																
															1060																1065																1070
Gly	Lys	Trp	Cys	Cys	Arg	Cys	Phe	Pro	Cys	Cys	Arg	Glu	Ser	Gly	Lys																																
															1075																1080																1085
Ser	Asn	Val	Gly	Thr	Ser	Gly	Asp	His	Asp	Asp	Ser	Ala	Met	Lys	Thr																																
															1090																1095																1100
Leu	Arg	Ser	Lys	Met	Gly	Lys	Trp	Cys	Arg	His	Cys	Phe	Pro	Cys	Cys																																
															1105																1110																1115
Arg	Gly	Ser	Gly	Lys	Ser	Asn	Val	Gly	Ala	Ser	Gly	Asp	His	Asp	Asp																																
															1125																1130																1135
Ser	Ala	Met	Lys	Thr	Leu	Arg	Asn	Lys	Met	Gly	Lys	Trp	Cys	Cys	His																																
															1140																1145																1150
Cys	Phe	Pro	Cys	Cys	Arg	Gly	Ser	Gly	Lys	Ser	Lys	Val	Gly	Ala	Trp																																
															1155																1160																1165
Gly	Asp	Tyr	Asp	Asp	Ser	Ala	Phe	Met	Glu	Pro	Arg	Tyr	His	Val	Arg																																
															1170																1175																1180
Gly	Glu	Asp	Leu	Asp	Lys	Leu	His	Arg	Ala	Ala	Trp	Trp	Gly	Lys	Val																																
															1185																1190																1195
Pro	Arg	Lys	Asp	Leu	Ile	Val	Met	Leu	Arg	Asp	Thr	Asp	Val	Asn	Lys																																
															1205																1210																1215
Lys	Asp	Lys	Gln	Lys	Arg	Thr	Ala	Leu	His	Leu	Ala	Ser	Ala	Asn	Gly																																
															1220																1225																1230
Asn	Ser	Glu	Val	Val	Lys	Leu	Leu	Leu	Asp	Arg	Arg	Cys	Gln	Leu	Asn																																
															1235																1240																1245
Val	Leu	Asp	Asn	Lys	Lys	Arg	Thr	Ala	Leu	Ile	Lys	Ala	Val	Gln	Cys																																
															1250																1255																1260
Gln	Glu	Asp	Glu	Cys	Ala	Leu	Met	Leu	Leu	Glu	His	Gly	Thr	Asp	Pro																																
															1265																1270																1275
Asn	Ile	Pro	Asp	Glu	Tyr	Gly	Asn	Thr	Thr	Leu	His	Tyr	Ala	Ile	Tyr																																
															1285																1290																1295
Asn	Glu	Asp	Lys	Leu	Met	Ala	Lys	Ala	Leu	Leu	Leu	Tyr	Gly	Ala	Asp																																
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Ile	Glu	Ser	Lys	Asn	Lys	His	Gly	Leu	Thr	Pro	Leu	Leu	Gly	Val																																	
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His	Glu	Gln	Lys	Gln	Gln	Val	Val	Lys	Phe	Leu	Ile	Lys	Lys	Lys	Ala																																
															1330																1335																1340
Asn	Leu	Asn	Ala	Leu	Asp	Arg	Tyr	Gly	Arg	Thr	Ala	Leu	Ile	Leu	Ala																																
															1345																1350																1355
Val	Cys	Cys																																													

120

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      1460      1465      1470
Asn Asn Val Gly Leu Leu Glu Asn Leu Thr Asn Gly Val Thr Ala Gly
      1475      1480      1485
Asn Gly Asp Asn Gly Leu Ile Pro Gln Arg Lys Ser Arg Thr Pro Glu
      1490      1495      1500
Asn Gln Gln Phe Pro Asp Asn Glu Ser Glu Glu Tyr His Arg Ile Cys
1505      1510      1515      152
Glu Leu Val Ser Asp Tyr Lys Glu Lys Gln Met Pro Lys Tyr Ser Ser
      1525      1530      1535
Glu Asn Ser Asn Pro Glu Gln Asp Leu Lys Leu Thr Ser Glu Glu Glu
      1540      1545      1550
Ser Gln Arg Leu Glu Gly Ser Glu Asn Gly Gln Pro Glu Lys Arg Ser
      1555      1560      1565
Gln Glu Pro Glu Ile Asn Lys Asp Gly Asp Arg Glu Leu Glu Asn Phe
      1570      1575      1580
Met Ala Ile Glu Glu Met Lys Lys His Gly Ser Thr His Val Gly Phe
1585      1590      1595      160
Pro Glu Asn Leu Thr Asn Gly Ala Thr Ala Gly Asn Gly Asp Asp Gly
      1605      1610      1615
Leu Ile Pro Pro Arg Lys Ser Arg Thr Pro Glu Ser Gln Gln Phe Pro
      1620      1625      1630
Asp Thr Glu Asn Glu Glu Tyr His Ser Asp Glu Gln Asn Asp Thr Gln
      1635      1640      1645
Lys Gln Phe Cys Glu Glu Gln Asn Thr Gly Ile Leu His Asp Glu Ile
      1650      1655      1660
Leu Ile His Glu Glu Lys Gln Ile Glu Val Val Glu Lys Met Asn Ser
1665      1670      1675      168
Glu Leu Ser Leu Ser Cys Lys Lys Glu Lys Asp Ile Leu His Glu Asn
      1685      1690      1695
Ser Thr Leu Arg Glu Glu Ile Ala Met Leu Arg Leu Glu Leu Asp Thr
      1700      1705      1710
Met Lys His Gln Ser Gln Leu
      1715

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<210> 379
<211> 656
<212> PRT
<213> Homo sapien

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      <400> 379
Met Val Val Glu Val Asp Ser Met Pro Ala Ala Ser Ser Val Lys Lys
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Pro Phe Gly Leu Arg Ser Lys Met Gly Lys Trp Cys Cys Arg Cys Phe
      20      25      30
Pro Cys Cys Arg Glu Ser Gly Lys Ser Asn Val Gly Thr Ser Gly Asp
      35      40      45
His Asp Asp Ser Ala Met Lys Thr Leu Arg Ser Lys Met Gly Lys Trp
      50      55      60
Cys Arg His Cys Phe Pro Cys Cys Arg Gly Ser Gly Lys Ser Asn Val
65      70      75      80
Gly Ala Ser Gly Asp His Asp Asp Ser Ala Met Lys Thr Leu Arg Asn
      85      90      95
Lys Met Gly Lys Trp Cys Cys His Cys Phe Pro Cys Cys Arg Gly Ser
      100      105      110
Gly Lys Ser Lys Val Gly Ala Trp Gly Asp Tyr Asp Asp Ser Ala Phe
      115      120      125
Met Glu Pro Arg Tyr His Val Arg Gly Glu Asp Leu Asp Lys Leu His
      130      135      140
Arg Ala Ala Trp Trp Gly Lys Val Pro Arg Lys Asp Leu Ile Val Met
145      150      155      160
Leu Arg Asp Thr Asp Val Asn Lys Lys Asp Lys Gln Lys Arg Thr Ala
      165      170      175

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Leu His Leu Ala Ser Ala Asn Gly Asn Ser Glu Val Val Lys Leu Leu  
 180 185 190  
 Leu Asp Arg Arg Cys Gln Leu Asn Val Leu Asp Asn Lys Lys Arg Thr  
 195 200 205  
 Ala Leu Ile Lys Ala Val Gln Cys Gln Glu Asp Glu Cys Ala Leu Met  
 210 215 220  
 Leu Leu Glu His Gly Thr Asp Pro Asn Ile Pro Asp Glu Tyr Gly Asn  
 225 230 235 240  
 Thr Thr Leu His Tyr Ala Ile Tyr Asn Glu Asp Lys Leu Met Ala Lys  
 245 250 255  
 Ala Leu Leu Leu Tyr Gly Ala Asp Ile Glu Ser Lys Asn Lys His Gly  
 260 265 270  
 Leu Thr Pro Leu Leu Leu Gly Val His Glu Gln Lys Gln Gln Val Val  
 275 280 285  
 Lys Phe Leu Ile Lys Lys Lys Ala Asn Leu Asn Ala Leu Asp Arg Tyr  
 290 295 300  
 Gly Arg Thr Ala Leu Ile Leu Ala Val Cys Cys Gly Ser Ala Ser Ile  
 305 310 315 320  
 Val Ser Leu Leu Leu Glu Gln Asn Ile Asp Val Ser Ser Gln Asp Leu  
 325 330 335  
 Ser Gly Gln Thr Ala Arg Glu Tyr Ala Val Ser Ser His His His Val  
 340 345 350  
 Ile Cys Gln Leu Leu Ser Asp Tyr Lys Glu Lys Gln Met Leu Lys Ile  
 355 360 365  
 Ser Ser Glu Asn Ser Asn Pro Glu Gln Asp Leu Lys Leu Thr Ser Glu  
 370 375 380  
 Glu Glu Ser Gln Arg Phe Lys Gly Ser Glu Asn Ser Gln Pro Glu Lys  
 385 390 395 400  
 Met Ser Gln Glu Pro Glu Ile Asn Lys Asp Gly Asp Arg Glu Val Glu  
 405 410 415  
 Glu Glu Met Lys Lys His Glu Ser Asn Asn Val Gly Leu Leu Glu Asn  
 420 425 430  
 Leu Thr Asn Gly Val Thr Ala Gly Asn Gly Asp Asn Gly Leu Ile Pro  
 435 440 445  
 Gln Arg Lys Ser Arg Thr Pro Glu Asn Gln Gln Phe Pro Asp Asn Glu  
 450 455 460  
 Ser Glu Glu Tyr His Arg Ile Cys Glu Leu Val Ser Asp Tyr Lys Glu  
 465 470 475 480  
 Lys Gln Met Pro Lys Tyr Ser Ser Glu Asn Ser Asn Pro Glu Gln Asp  
 485 490 495  
 Leu Lys Leu Thr Ser Glu Glu Glu Ser Gln Arg Leu Glu Gly Ser Glu  
 500 505 510  
 Asn Gly Gln Pro Glu Leu Glu Asn Phe Met Ala Ile Glu Glu Met Lys  
 515 520 525  
 Lys His Gly Ser Thr His Val Gly Phe Pro Glu Asn Leu Thr Asn Gly  
 530 535 540  
 Ala Thr Ala Gly Asn Gly Asp Asp Gly Leu Ile Pro Pro Arg Lys Ser  
 545 550 555 560  
 Arg Thr Pro Glu Ser Gln Gln Phe Pro Asp Thr Glu Asn Glu Glu Tyr  
 565 570 575  
 His Ser Asp Glu Gln Asn Asp Thr Gln Lys Gln Phe Cys Glu Glu Gln  
 580 585 590  
 Asn Thr Gly Ile Leu His Asp Glu Ile Leu Ile His Glu Glu Lys Gln  
 595 600 605  
 Ile Glu Val Val Glu Lys Met Asn Ser Glu Leu Ser Leu Ser Cys Lys  
 610 615 620  
 Lys Glu Lys Asp Ile Leu His Glu Asn Ser Thr Leu Arg Glu Glu Ile  
 625 630 635 640  
 Ala Met Leu Arg Leu Glu Leu Asp Thr Met Lys His Gln Ser Gln Leu  
 645 650 655

&lt;210&gt; 380

<211> 671  
 <212> PRT  
 <213> Homo sapien

<400> 380

Met	Val	Val	Glu	Val	Asp	Ser	Met	Pro	Ala	Ala	Ser	Ser	Val	Lys	Lys
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Pro	Phe	Gly	Leu	Arg	Ser	Lys	Met	Gly	Lys	Trp	Cys	Cys	Arg	Cys	Phe
			20					25					30		
Pro	Cys	Cys	Arg	Glu	Ser	Gly	Lys	Ser	Asn	Val	Gly	Thr	Ser	Gly	Asp
		35					40					45			
His	Asp	Asp	Ser	Ala	Met	Lys	Thr	Leu	Arg	Ser	Lys	Met	Gly	Lys	Trp
	50					55					60				
Cys	Arg	His	Cys	Phe	Pro	Cys	Cys	Arg	Gly	Ser	Gly	Lys	Ser	Asn	Val
65					70					75				80	
Gly	Ala	Ser	Gly	Asp	His	Asp	Asp	Ser	Ala	Met	Lys	Thr	Leu	Arg	Asn
			85						90					95	
Lys	Met	Gly	Lys	Trp	Cys	Cys	His	Cys	Phe	Pro	Cys	Cys	Arg	Gly	Ser
			100					105					110		
Gly	Lys	Ser	Lys	Val	Gly	Ala	Trp	Gly	Asp	Tyr	Asp	Asp	Ser	Ala	Phe
		115					120					125			
Met	Glu	Pro	Arg	Tyr	His	Val	Arg	Gly	Glu	Asp	Leu	Asp	Lys	Leu	His
	130					135					140				
Arg	Ala	Ala	Trp	Trp	Gly	Lys	Val	Pro	Arg	Lys	Asp	Leu	Ile	Val	Met
145					150					155				160	
Leu	Arg	Asp	Thr	Asp	Val	Asn	Lys	Lys	Asp	Lys	Gln	Lys	Arg	Thr	Ala
			165						170					175	
Leu	His	Leu	Ala	Ser	Ala	Asn	Gly	Asn	Ser	Glu	Val	Val	Lys	Leu	Leu
			180				185						190		
Leu	Asp	Arg	Arg	Cys	Gln	Leu	Asn	Val	Leu	Asp	Asn	Lys	Lys	Arg	Thr
	195						200					205			
Ala	Leu	Ile	Lys	Ala	Val	Gln	Cys	Gln	Glu	Asp	Glu	Cys	Ala	Leu	Met
	210					215					220				
Leu	Leu	Glu	His	Gly	Thr	Asp	Pro	Asn	Ile	Pro	Asp	Glu	Tyr	Gly	Asn
225					230					235				240	
Thr	Thr	Leu	His	Tyr	Ala	Ile	Tyr	Asn	Glu	Asp	Lys	Leu	Met	Ala	Lys
			245						250					255	
Ala	Leu	Leu	Leu	Tyr	Gly	Ala	Asp	Ile	Glu	Ser	Lys	Asn	Lys	His	Gly
			260				265						270		
Leu	Thr	Pro	Leu	Leu	Leu	Gly	Val	His	Glu	Gln	Lys	Gln	Gln	Val	Val
		275					280					285			
Lys	Phe	Leu	Ile	Lys	Lys	Lys	Ala	Asn	Leu	Asn	Ala	Leu	Asp	Arg	Tyr
	290					295					300				
Gly	Arg	Thr	Ala	Leu	Ile	Leu	Ala	Val	Cys	Cys	Gly	Ser	Ala	Ser	Ile
305					310					315					320
Val	Ser	Leu	Leu	Leu	Glu	Gln	Asn	Ile	Asp	Val	Ser	Ser	Gln	Asp	Leu
			325						330					335	
Ser	Gly	Gln	Thr	Ala	Arg	Glu	Tyr	Ala	Val	Ser	Ser	His	His	His	Val
			340					345					350		
Ile	Cys	Gln	Leu	Leu	Ser	Asp	Tyr	Lys	Glu	Lys	Gln	Met	Leu	Lys	Ile
	355					360						365			
Ser	Ser	Glu	Asn	Ser	Asn	Pro	Glu	Gln	Asp	Leu	Lys	Leu	Thr	Ser	Glu
	370				375						380				
Glu	Glu	Ser	Gln	Arg	Phe	Lys	Gly	Ser	Glu	Asn	Ser	Gln	Pro	Glu	Lys
385					390					395					400
Met	Ser	Gln	Glu	Pro	Glu	Ile	Asn	Lys	Asp	Gly	Asp	Arg	Glu	Val	Glu
			405						410					415	
Glu	Glu	Met	Lys	Lys	His	Glu	Ser	Asn	Asn	Val	Gly	Leu	Leu	Glu	Asn
		420						425					430		
Leu	Thr	Asn	Gly	Val	Thr	Ala	Gly	Asn	Gly	Asp	Asn	Gly	Leu	Ile	Pro
	435						440					445			
Gln	Arg	Lys	Ser	Arg	Thr	Pro	Glu	Asn	Gln	Gln	Phe	Pro	Asp	Asn	Glu

450		455		460
Ser Glu Glu Tyr His Arg Ile Cys Glu Leu Val Ser Asp Tyr Lys Glu				
465		470		475
Lys Gln Met Pro Lys Tyr Ser Ser Glu Asn Ser Asn Pro Glu Gln Asp				480
	485		490	495
Leu Lys Leu Thr Ser Glu Glu Glu Ser Gln Arg Leu Glu Gly Ser Glu				
	500		505	510
Asn Gly Gln Pro Glu Lys Arg Ser Gln Glu Pro Glu Ile Asn Lys Asp				
	515		520	525
Gly Asp Arg Glu Leu Glu Asn Phe Met Ala Ile Glu Glu Met Lys Lys				
	530		535	540
His Gly Ser Thr His Val Gly Phe Pro Glu Asn Leu Thr Asn Gly Ala				560
545		550		555
Thr Ala Gly Asn Gly Asp Asp Gly Leu Ile Pro Pro Arg Lys Ser Arg				575
	565		570	
Thr Pro Glu Ser Gln Gln Phe Pro Asp Thr Glu Asn Glu Glu Tyr His				
	580		585	590
Ser Asp Glu Gln Asn Asp Thr Gln Lys Gln Phe Cys Glu Glu Gln Asn				
	595		600	605
Thr Gly Ile Leu His Asp Glu Ile Leu Ile His Glu Glu Lys Gln Ile				
	610		615	620
Glu Val Val Glu Lys Met Asn Ser Glu Leu Ser Leu Ser Cys Lys Lys				
625		630		635
Glu Lys Asp Ile Leu His Glu Asn Ser Thr Leu Arg Glu Glu Ile Ala				640
	645		650	655
Met Leu Arg Leu Glu Leu Asp Thr Met Lys His Gln Ser Gln Leu				
	660		665	670

<210> 381  
 <211> 251  
 <212> DNA  
 <213> Homo sapien

<400> 381	
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ccaatatccc aggagaagca ttggggaggt gggggcaggt gaaggacca ggactcacac	180
atcctggggc tccaaggcag aggagaggggt cctcaagaag gtcaggagga aaatccgtaa	240
caagcagtca g	251

<210> 382  
 <211> 3279  
 <212> DNA  
 <213> Homo sapiens

<400> 382	
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atgctggagg gtgtcaggaa gtgatcgggc tctggggcag ggaggagggg tggggagtgt	120
cactgggagg ggacatcctg cagaaggtag gagtgcagaa acacccgctg caggggaggg	180
gagagccctg cggcacctgg gggagcagag ggagcagcac ctgcccaggc ctgggaggag	240
gggcctggag ggcgtgagga ggagcgaggg ggctgcatgg ctggagttag ggatcagggg	300
cagggcgcgga gatggcctca cacagggaag agagggcccc tcctgcaggg cctcacctgg	360
gccacaggag gacactgctt ttcctctgag gagtgcaggag ctgtggatgg tgctggacag	420
aagaaggaca gggcctggct cagggtgtcca gaggtgtcgc ctggcttccc tttgggatca	480
gactgcaggg agggagggcg gcagggttgt ggggggagtg acgatgagga tgacctgggg	540
gtggctccag gccttgcccc tgcctggggc ctcaccagc ctccctcaca gtctcctggc	600
cctcagtctc tcccctccac tccatcctcc atctggcctc agtgggtcat tctgatcact	660
gaactgacca taccagccc tgcccacggc cctccatggc tcccgaatgc cctggagagg	720
ggacatctag tcagagagta gtccctgaaga ggtggcctct gcgatgtgcc tgtgggggca	780
gcatacctgca gatggtcccc gccctcatcc tgctgacctg tctgcaggga ctgtcctcct	840
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gagccttggt ccctctgttg gactccctgc ccatattctt gtgggagtgg gttctggaga	960

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catttctgtc tgttcctgag agctgggaat tgcctcagtc catctgcctg cgcgggttctg 1020
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tagggggaga aactgaaagc tgattaatta caggagggtt gttcaggtcc ccaaaccac 1860
cgctcagatt gatgatttcc tagcaggact tacagaaata aagagctatc atgctgtgg 1920
ttattatggg ttgttacatt gataggatac atactgaaat cagcaaaca aacagatgta 1980
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aaagaagaat ccagaaatag gggcacattg aggaatgata ctgagcccaa agagcattca 2760
atcattgttt tatttgcctt cttttcacac cattggtgag ggagggatta ccaccctggg 2820
gttatgaaga tggttgaaca cccacacat agcaccggag atatgagatc aacagtttct 2880
tagccataga gattcacagc ccagagcagg aggacgtgac acaccatgca ggatgacatg 2940
ggggatgcgc tcgggatttg tgtgaagaag caaggactgt tagaggcagg ctttatagta 3000
acaagacggt ggggcaaaact ctgatttccg tgggggaatg tcatggctt gctttactaa 3060
gttttgagac tggcaggtag tgaaactcat taggctgaga acctgtgga atgcagctga 3120
cccagctgat agaggaagta gccaggtggg agcctttccc agtgggtgtg ggacatatct 3180
ggcaagatgt tgtggcactc ctggttacag atactggggc agcaaataaa actgaatctt 3240
gttttcagac cttaaaaaaa aaaaaaaaaa aaaagtgtt 3279

```

&lt;210&gt; 383

&lt;211&gt; 155

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 383

```

Met Ala Gly Val Arg Asp Glu Gly Gln Gly Ala Arg Trp Pro His Thr
      5                      10                      15

```

```

Gly Lys Arg Gly Pro Leu Leu Gln Gly Leu Thr Trp Ala Thr Gly Gly
      20                      25                      30

```

```

His Cys Phe Ser Ser Glu Glu Ser Gly Ala Val Asp Gly Ala Gly Gln
      35                      40                      45

```

```

Lys Lys Asp Arg Ala Trp Leu Arg Cys Pro Glu Ala Val Ala Gly Phe
      50                      55                      60

```

```

Pro Leu Gly Ser Asp Cys Arg Glu Gly Gly Arg Gln Gly Cys Gly Gly
      65                      70                      75                      80

```

```

Ser Asp Asp Glu Asp Asp Leu Gly Val Ala Pro Gly Leu Ala Pro Ala

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125

	85		90		95										
Trp	Ala	Leu	Thr	Gln	Pro	Pro	Ser	Gln	Ser	Pro	Gly	Pro	Gln	Ser	Leu
		100						105					110		
Pro	Ser	Thr	Pro	Ser	Ser	Ile	Trp	Pro	Gln	Trp	Val	Ile	Leu	Ile	Thr
		115					120					125			
Glu	Leu	Thr	Ile	Pro	Ser	Pro	Ala	His	Gly	Pro	Pro	Trp	Leu	Pro	Asn
	130						135					140			
Ala	Leu	Glu	Arg	Gly	His	Leu	Val	Arg	Glu						
145						150									

<210> 384  
 <211> 557  
 <212> DNA  
 <213> Homo sapiens

<400> 384  
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 aaagatgtgt tttgttttgg actctctgtg gtcccttcca atgctgtggg tttccaacca 120  
 ggggaagggt cccttttgca ttgccaagt ccataaccat gagcactact ctaccatggt 180  
 tctgcctcct ggccaagcag gctggtttgc aagaatgaaa tgaatgattc tacagctagg 240  
 acttaacctt gaaatggaaa gtcttgcaat cccatttgca ggatccgtct gtgcacatgc 300  
 ctctgtagag agcagcattc ccagggacct tggaaacagt tggcactgta aggtgcttgc 360  
 tccccaagac acatcctaaa aggtgttgta atggtgaaaa cgtcttcctt ctttattgcc 420  
 ccttcttatt tatgtgaaca actgtttgc tttttttgta tcttttttaa actgtaaagt 480  
 tcaattgtga aaatgaatat catgcaaata aattatgcga tttttttttc aaagtaaaaa 540  
 aaaaaaaaaa aaaaaaa 557

<210> 385  
 <211> 337  
 <212> DNA  
 <213> Homo sapiens

<400> 385  
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 gtttctctag cagcagatgg gttaggagga agtgacccaa gtggttgact cctatgtgca 120  
 tctcaaagcc atctgctgtc ttcgagtacg gacacatcat cactcctgca ttgttgatca 180  
 aaacgtggag gtgcttttcc tcagctaaga agcccttagc aaaagctcga atagacttag 240  
 tatcagacag gtccagtttc cgcaccaaca cctgctggtt ccctgtcgtg gtctggatct 300  
 ctttggccac caattcccc tttccacat cccggca 337

<210> 386  
 <211> 300  
 <212> DNA  
 <213> Homo sapiens

<400> 386  
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 gccgcgtcgc cccagagggg gggcgcgagg ctgcctctac cggtggcggt ctgtaactca 120  
 gcgaccttgg cccgaaggct ctagcaagga cccaccgacc ccagccgcgg cggcggcggc 180  
 gcggactttg cccggtgtgt gggcgcgagg ggactgcgtg tccgcggacg ggcagcgaag 240  
 atgtagcct tcgctgccag gaccgtggac cgatcccagg gctgtggtgt aacctcagcc 300

<210> 387  
 <211> 537  
 <212> DNA  
 <213> Homo sapiens

&lt;400&gt; 387

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ccccctcctg  tgccatcatg  atcagcacct  atgagttcgg  caaaagcttc  ttccagaggc  120
tgaaccagga  ccggcttctg  ggcggtgaa  aggggcaagg  aggcaaggac  cccgtctctc  180
ccacggatgg  ggagagggca  ggaggagacc  cagccaagtg  ccttttcctc  agcactgagg  240
gagggggctt  gtttcccttc  cctcccgggc  acaagctcca  gggcagggct  gtccctctgg  300
gcggcccagc  acttcctcag  acacaacttc  ttctgtctgc  tccagtcgtg  gggatcatca  360
cttaccacc  cccaagttc  aagaccaa  cttccagctg  ccccttcgt  gtttccctgt  420
gtttgctgta  gctgggcatg  tctccaggaa  ccaagaagcc  ctcagcctgg  tgtagtctcc  480
ctgacccttg  ttaattcctt  aagtctaaag  atgatgaact  tcaaaaaaaaa  aaaaaaa  537

```

&lt;210&gt; 388

&lt;211&gt; 520

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 388

```

aggataat  ttaaaccaat  caaatgaaaa  aaacaaacaa  acaaaaaagg  aaatgtcatg  60
tgaggtaaa  ccagtttgca  ttccccta  gtggaaaaag  taagaggact  actcagcact  120
gtttgaagat  tgccctcttct  acagcttctg  agaatttgtgt  tatttcactt  gccaaagtga  180
ggacccccctc  cccaacatgc  cccagcccac  ccctaagcat  ggtcccttgt  caccaggcaa  240
ccaggaaact  gctacttggt  gacctcacca  gagaccagga  gggtttggt  agctcacagg  300
acttccccca  cccagaaga  ttagcatccc  atactagact  cataactcaac  tcaactaggc  360
tcatactcaa  ttgatgggta  ttagacaatt  ccatttcttt  ctggttatta  taaacagaaa  420
atctttcctc  ttctcattac  cagtaaaggc  tcttggtatc  tttctgttgg  aatgatttct  480
atgaacttgt  cttattttta  tggtaggggt  ttttctggt  520

```

&lt;210&gt; 389

&lt;211&gt; 365

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 389

```

cgttgcccc  gtttgacaga  aggaaaggcg  gagcttattc  aaagtctaga  gggagtggag  60
gagttaaggc  tggatttcag  atctgcctgg  ttccagccgc  agtgtgccct  ctgctcccc  120
aacgactttc  caaataatct  caccagcgcc  ttccagctca  ggcgtcctag  aagcgtcttg  180
aagcctatgg  ccagctgtct  ttgtgttccc  tctcaccgc  ctgtcctcac  agctgagact  240
cccaggaaac  cttcagacta  ccttcctctg  ccttcagcaa  ggggcgttgc  ccacattctc  300
tgagggtcag  tggaagaacc  tagactccca  ttgctagagg  tagaaagggg  aagggtgctg  360
gggag  365

```

&lt;210&gt; 390

&lt;211&gt; 221

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(221)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 390

```

tgccctctcca  tcctggcccc  gacttctctg  tcaggaaagt  ggggatggac  cccatctgca  60
tacacggntt  ctcatgggtg  tggaacatct  ctgcttgccg  tttcaggaag  gcctctggct  120
gctctangag  tctgancnga  ntcgttgccc  cantntgaca  naaggaaagg  cggagcttat  180
tcaaagtcta  gagggagtg  aggagttaa  gctggatttc  a  221

```

&lt;210&gt; 391

&lt;211&gt; 325

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens



127

<220>  
 <221> misc\_feature  
 <222> (1)...(325)  
 <223> n = A,T,C or G

<400> 391  
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 tagccagggc actgctgcca acagccagtc cnnataccat catgtnaccc ggtgngctct 180  
 naanttngat ntccanagcc ctacccatcn tagttctgct ctcccaccgg ntaccagccc 240  
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 gagacctccg gctactacta tgacc 325

<210> 392  
 <211> 277  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)...(277)  
 <223> n = A,T,C or G

<400> 392  
 atattgttta actccttctt ttatatcttt taacattttc atggngaaaag gttcacatct 60  
 agtctcactt nggcnagn gn ctctacttg agtctcttcc cgggctggn ccagtngnaa 120  
 antaccanga accgncatgn cttaanaacn ncctggtttn tgggttnntc aatgactgca 180  
 tgcagtgcac caccctgtcc actacgtgat gctgtaggat taaagtctca cagtgggcgg 240  
 ctgaggatac agcgccgcgt cctgtgttgc tggggaa 277

<210> 393  
 <211> 566  
 <212> DNA  
 <213> Homo sapiens

<400> 393  
 actagtccag tgtggtggaa ttccgcgccg cgtcgacgga caggtcagct gtctggctca 60  
 gtgatctaca ttctgaagtt gtctgaaaat gtcttcatga tttaaattcag cctaaacgtt 120  
 ttgccgggaa cactgcagag acaatgctgt gagtttccaa ccttagccca tctgcgggca 180  
 gagaaggtct agtttgtcca tcagcattat catgatata ggactgggta cttgggttaag 240  
 gaggggtcta ggagatctgt ccctttttaga gacaccttac ttataatgaa gtatttggga 300  
 ggggtggttt caaaagtaga aatgtcctgt attccgatga tcatcctgta aacattttat 360  
 cattttattaa tcatccctgc ctgtgtctat tattatattc atatctctac gctggaaact 420  
 ttctgcctca atgtttactg tgcctttgtt tttgctagtt tgtgttgttg aaaaaaaaaa 480  
 cattctctgc ctgagtttta atttttgtcc aaagttattt taatctatac aattaaaagc 540  
 ttttgcctat caaaaaaaaaa aaaaaa 566

<210> 394  
 <211> 384  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)...(384)  
 <223> n = A,T,C or G

<400> 394  
 gaacatacat gtcccgccac ctgagctgca gtctgacatc atcgccatca cgggcctcgc 60  
 tgcaaattng gaccgggcca aggctggact gctggagcgt gtgaaggagc tacaggccna 120  
 gcaggaggac cgggctttta ggagttttta gctgagtgtc actgtagacc ccaaatacca 180  
 tcccaagatt atcgggagaa agggggcagc aattacccaa atccggttgg agcatgacgt 240

128

```

gaacatccag tttcctgata aggacgatgg gaaccagccc caggaccaa ttaccatcac 300
agggtacgaa aagaacacag aagctgccag ggatgctata ctgagaattg tgggtgaact 360
tgagcagatg gtttctgagg acgt                                     384

```

```

<210> 395
<211> 399
<212> DNA
<213> Homo sapiens

```

```

<400> 395
ggcaaaactg tgtgacctca ataagacctc gcagatccaa ggtcaagtat cagaagtgc 60
tctgaccttg gactccaaga cctacatcaa cagcctggct atattagatg atgagccagt 120
tatcagaggt ttcattcattg cggaaattgt ggagtctaag gaaatcatgg cctctgaagt 180
attcacgtct ttccagtacc ctgagttctc tatagagttg cctaacacag gcagaattgg 240
ccagctactt gtctgcaatt gtatcttcaa gaataccctg gccatccctt tgactgacgt 300
caagttctct ttggaaagcc tgggcatctc ctactacag acctctgacc atgggacggt 360
gcagcctggt gagaccatcc aatcccaaat aaaatgcac                                     399

```

```

<210> 396
<211> 403
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (1)...(403)
<223> n = A,T,C or G

```

```

<400> 396
tggagttntc agtgcaaaca agccataaag cttcagtagc aaattactgt ctcacagaaa 60
gacattttca acttctgctc cagctgctga taaaacaaat catgtgttta gcttgactcc 120
agacaaggac aacctgttcc ttcataactc tctagagaaa aaaaggagtt gttagtagat 180
actaaaaaaaa gtggatgaat aatctggata tttttcctaa aaagattcct tgaaacacat 240
taggaaaaatg gagggcctta tgatcagaat gctagaatta gtccattgtg ctgaagcagg 300
gttttagggga gggagtggag gataaaaagaa ggaaaaaaag aagagtgaga aaacctattt 360
atcaaagcag gtgctatcac tcaatgttag gccctgctct ttt                                     403

```

```

<210> 397
<211> 100
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (1)...(100)
<223> n = A,T,C or G

```

```

<400> 397
actagtnacg tgtggtggaa ttcgcggccg cgtcgacctc naanccatct ctatagcaaa 60
tccatccccg ctcttggttg gtnacagaat gactgacaaa                                     100

```

```

<210> 398
<211> 278
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (1)...(278)
<223> n = A,T,C or G

```

```

<400> 398

```

```

gcggccgcgt cgacagcagt tccgccagcg ctccgccctg ggtgggggatg tgetgcacgc 60
ccacctggac atctggaagt cagcggcctg gatgaaagag cggacttcac ctggggcgat 120
tcaactactgt gcctcgacca gtgaggagag ctggaccgac agcgaggtgg actcatcatg 180
ctccggggcag cccatccacc tgtggcagtt cctcaaggag ttgctactca agccccacag 240
ctatggccgc ttcattangt ggctcaacaa ggagaagg 278

```

```

<210> 399
<211> 298
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (1)...(298)
<223> n = A,T,C or G

```

```

<400> 399
acggaggtgg aggaagcgnc cctgggatcg anaggatggg tcctgncatt gaccncctcn 60
ggggtgccng catggagcgc atgggcgcgg gcctgggcca cggcatggat cgcgtgggct 120
ccgagatcga gcgcatgggc ctgggtcatgg accgcatggg ctccgtggag cgcgtgggct 180
ccggcattga gcgcatgggc ccgctgggcc tcgaccacat ggcctccanc attganccga 240
tgggccagac catggagcgc attggctctg gcgtggagcn catgggtgcc ggcattggg 298

```

```

<210> 400
<211> 548
<212> DNA
<213> Homo sapiens

```

```

<400> 400
acatcaacta ctctctcatt ttaaggtatg gcagttccct tcatccccctt ttctgcctt 60
gtacatgtac atgtatgaaa ttctcttctc ttaccgaact ctctccacac atcacaagg 120
caaagaacca cacgcttaga agggtaagag ggcaccctat gaaatgaaat ggtgatttct 180
tgagtctctt ttttccacgt ttaaggggcc atggcaggac ttagagttgc gagttaagac 240
tgcagagggc tagagaatta ttctatacag gctttgaggc caccatgtc acttatccc 300
tataccctct caccatcccc ttgtctactc tgatgcccc aagatgcaac tgggcagcta 360
gttgccccca taattctggg cctttgttgt ttgttttaac tacttgggca tcccaggaag 420
ctttccagtg atctctacc atgggcccc ctcctgggat caagcccctc ccaggccctg 480
tccccagccc ctctgcccc agcccacccg cttgccttgg tgctcagccc tcccattggg 540
agcaggtt 548

```

```

<210> 401
<211> 355
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (1)...(355)
<223> n = A,T,C or G

```

```

<400> 401
actgtttcca tggtatgttt ctacacattg ctacctcagt gtccttgga acttagcttt 60
tgatgtctcc aagtagtcca ccttcattta actctttgaa actgtatcat ctttgccaag 120
taagagtggg ggcctatttc agctgctttg acaaaatgac tggctcctga cttaacgttc 180
tataaatgaa tgtgctgaag caaagtgcc atggtggcgg cgaagaagan aaagatgtgt 240
tttgttttgg actctctgtg gtcccttcca atgctgnggg tttccaacca ggggaagggt 300
cccttttgca ttgccaagtg ccataaccat gagcactact ctaccatggn tctgc 355

```

```

<210> 402
<211> 407
<212> DNA
<213> Homo sapiens

```

130

<220>  
 <221> misc\_feature  
 <222> (1)...(407)  
 <223> n = A,T,C or G

<400> 402  
 atggggcaag ctggataaag aaccaagacc cactggagta tgctgtcttc aagaaaccca 60  
 tctcacatgc ggtggcatac ataggctcaa aataaaggaa tggagaaaaa tatttcaagc 120  
 aaatggaaaa cagaaaaaag caggtgttgc actcctactt tctgacaaaa cagactatgc 180  
 gaataaagat aaaaaaagaga aggacattac aaagggtggc ctgacctttg ataaatctca 240  
 ttgcttgata ccaacctggg ctgttttaat tgcccaaacc aaaaggataa tttgctgagg 300  
 ttgtggagct tctcccctgc agagagtcct tgatctccca aaatttggtt gagatgtaag 360  
 gntgattttg ctgacaactc cttttctgaa gttttactca tttccaa 407

<210> 403  
 <211> 303  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)...(303)  
 <223> n = A,T,C or G

<400> 403  
 cagtatttat agccnaactg aaaagctagt agcaggcaag tctcaaatcc aggcacccaaa 60  
 tcctaagcaa gagccatggc atggtgaaaa tgcaaaagga gagtctggcc aatctacaaa 120  
 tagagaacaa gacctactca gtcataaaca aaaaggcaga caccaacatg gatctcatgg 180  
 gggattggat attgtaatta tagagcagga agatgacagt gatcgctatt tggcacaaca 240  
 tcttaacaac gaccgaaacc cattattttac ataaacctcc attcggtaac catgttgaaa 300  
 gga 303

<210> 404  
 <211> 225  
 <212> DNA  
 <213> Homo sapiens

<400> 404  
 aagtgttaact tttaaaaatt tagtggattt tgaaaattct tagaggaaaag taaaggaaaa 60  
 attgttaatg cactcattta cctttacatg gtgaaagtgc tctcttgatc ctacaaacag 120  
 acattttcca ctgctgtttc catagtgtgt aagtgtatca gatgtgttgg gcatgtgaat 180  
 ctccaagtgc ctgtgtaata aataaagtat ctttatttca ttcatt 225

<210> 405  
 <211> 334  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)...(334)  
 <223> n = A,T,C or G

<400> 405  
 gagctgttat actgtgagtt ctactaggaa atcatcaaat ctgagggttg tctggaggac 60  
 ttcaatacac ctccccccat agtgaatcag cttccagggg gtccagtccc tctccttact 120  
 tcatccccat cccatgccaa aggaagaccc tccctccttg gctcacagcc ttctctaggc 180  
 ttcccagtgct ctccaggaca gagtgggtta tgttttcagc tccatccttg ctgtgagtg 240  
 ctggtgagggt tgtgcctcca gcttctgctc agtgcttcat ggacagtgtc cagcccatgt 300  
 cactctccac tctctcanng tggatccac ccct 334

131

<210> 406  
 <211> 216  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)...(216)  
 <223> n = A,T,C or G

<400> 406  
 ttctatacct aatgagggag ttganatnac atnnaaccag gaaatgcatg gatctcaang 60  
 gaaacaaaca cccaataaac tcggagtggc agactgacaa ctgtgagaca tgcacttgct 120  
 acnaaacaca aatttnatgt tgcacccttg tttctacacc tgtgggttat gacaaagaca 180  
 actgccaaag aatnttcaag aaggaggact gccant 216

<210> 407  
 <211> 413  
 <212> DNA  
 <213> Homo sapiens

<400> 407  
 gctgacttgc tagtattcatc tgcattcatt gaagcacaag aacttcatgc cttgactcat 60  
 gtaaatgcaa taggattaaa aaataaattt gatatcacat ggaaacagac aaaaaatatt 120  
 gtacaacatt gcacccagtg tcagattcta cacctggcca ctcaggaagc aagagttaat 180  
 cccagagggtc tatgtcctaa tgtgttatgg caaatggatg tcatgcacgt accttcattt 240  
 ggaaaattgt catttgtcca tgtgacagtt gatacttatt cacatttcat atgggcaacc 300  
 tgccagacag gagaaagtct tcccatgtta aaagacattt attatcttgt tttcctgtca 360  
 tgggagttcc agaaaaagtt aaaacagaca atgggccagg ttctgtagta aag 413

<210> 408  
 <211> 183  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)...(183)  
 <223> n = A,T,C or G

<400> 408  
 ggagctngcc ctcaattcct ccatntctat gttancatat ttaatgtctt ttgnnattaa 60  
 tncttaacta gttaatcctt aaagggtan ntaatcctta actagtcctt ccattgtgag 120  
 cattatcctt ccagtattcn ccttctnttt tatttactcc ttcttggtta cccatgtact 180  
 ntt 183

<210> 409  
 <211> 250  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)...(250)  
 <223> n = A,T,C or G

<400> 409  
 cccacgcatg ataagctctt tattttctgta agtcctgcta ggaaatcatc aaatctgacg 60  
 gtggtttggg ggacctgaac aaacctcctg taattaatca gctttcagtt tctcccccta 120  
 gtccctcctt caacaacata ggaggatcct ccccttcttt ctgctcacgg ctttatctag 180  
 gcttcccagt gccccagga cagcgtgggc tatgtttaca gcgcntcctt gctggggggg 240  
 ggcctatgc 250

<210> 410  
 <211> 306  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)...(306)  
 <223> n = A,T,C or G

<400> 410  
 ggctggtttg caagaatgaa atgaatgatt ctacagctag gacttaacct tgaaatggaa 60  
 agtcttgcaa tcccatattgc aggatccgtc tgtgcacatg cctctgtaga gaggcagcatt 120  
 cccagggacc ttggaaacag ttggcactgt aagggtgctt ctccccaaga cacatcctaa 180  
 aagggtgttg aatggtgaaa accgcttcct tctttattgc cccttcttat ttatgtgaac 240  
 nactggttgg ctttttttgn atctttttta aactggaaag ttcaattgng aaaatgaata 300  
 tcntgc 306

<210> 411  
 <211> 261  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)...(261)  
 <223> n = A,T,C or G

<400> 411  
 agagatattn cttaggtnaa agttcataga gttcccatga actatatgac tggccacaca 60  
 ggatcttttg tatttaagga ttctgagatt ttgcttgagc aggattagat aaggctgttc 120  
 tttaaatgtc tgaaatggaa cagatttcaa aaaaaaaccc cacaatctag ggtgggaaca 180  
 aggaaggaaa gatgtgaata ggctgatggg caaaaaacca atttaccat cagttccagc 240  
 cttctctcaa gngaggcaa a 261

<210> 412  
 <211> 241  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)...(241)  
 <223> n = A,T,C or G

<400> 412  
 gttcaatggt acctgacatt tctacaacac cccactcacc gatgtattcg ttgccagtg 60  
 ggaacatacc agcctgaatt tggaaaaaat aattgtgttt cttgccagc aaatactacg 120  
 actgactttg atggtccac aaacataacc cagtgtaaaa acagaagatg tggaggggag 180  
 ctgggagatt tcaactggga cattgaattc ccaactacc cangcaatta cccagccaac 240  
 a 241

<210> 413  
 <211> 231  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)...(231)  
 <223> n = A,T,C or G

<400> 413  
aactcttaca atccaagtga ctcatctgtg tgcttgaatc ctttccactg tctcatctcc 60  
ctcatccaag tttctagtag ctctctcttg ttgtgaagga taatcaaact gaacaacaaa 120  
aagtttactc tcctcatttg gaacctaaaa actctcttct tcctgggtct gaggggtcca 180  
agaatccttg aatcanttct cagatcattg gggacaccan atcaggaacc t 231

<210> 414  
<211> 234  
<212> DNA  
<213> Homo sapiens

<400> 414  
actgtccatg aagcactgag cagaagctgg aggcacaacg caccagacac tcacagcaag 60  
gatggagctg aaaacataac ccactctgtc ctggaggcac tgggaagcct agagaaggct 120  
gtgagccaag gagggagggt cttccttttg catgggatgg ggatgaagta aggagaggga 180  
ctggaccccc tggaagctga ttcactatgg ggggagggtg attgaagtcc tcca 234

<210> 415  
<211> 217  
<212> DNA  
<213> Homo sapiens

<220>  
<221> misc\_feature  
<222> (1)...(217)  
<223> n = A,T,C or G

<400> 415  
gcataggatt aagactgagt atcttttcta cattctttta acttttctaag gggcacttct 60  
caaaacacag accaggtagc aaatctccac tgctctaagg ntctcaccac cacttttctca 120  
cacctagcaa tagtagaatt cagtcctact tctgaggcca gaagaatggt tcagaaaaat 180  
antggattat aaaaaataac aattaagaaa aataatc 217

<210> 416  
<211> 213  
<212> DNA  
<213> Homo sapiens

<220>  
<221> misc\_feature  
<222> (1)...(213)  
<223> n = A,T,C or G

<400> 416  
atgcataatnt aaagganact gcctcgcttt tagaagacat ctggnetgct ctctgcatga 60  
ggcacagcag taaagctctt tgattcccag aatcaagaac tctccccttc agactattac 120  
cgaatgcaag gtggttaatt gaaggccact aattgatgct caaatagaag gatattgact 180  
atattggaac agatggagtc tctactacaa aag 213

<210> 417  
<211> 303  
<212> DNA  
<213> Homo sapiens

<220>  
<221> misc\_feature  
<222> (1)...(303)  
<223> n = A,T,C or G

<400> 417  
nagttcttcag gccatcagg gaagttcaca ctggagagaa gtcatacata tgtactgtat 60

134

```

gtgggaaagg ctttactctg agttcaaadc ttcaagccca tcagagagtc cacactggag 120
agaagccata caaatgcaat gagtgtggga agagcttcag gagggattcc cattatcaag 180
ttcatctagt ggtccacaca ggagagaaac cctataaatg tgagatatgt ggggaagggct 240
tcantcaaag ttcgtatctt caaatccatc ngaaggncca cagtatanan aaacctttta 300
agt

```

```

<210> 418
<211> 328
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (1)...(328)
<223> n = A,T,C or G

```

```

<400> 418
tttttgccgg tgggtggggca gggacggggac angagtctca ctctgttgcc caggctggag 60
tgcacaggca tgatctcggc tcactacaac ccctgcctcc catgtccaag cgattcttgt 120
gcctcagcct tccctgtagc tagaattaca ggcacatgcc accacaccca gctagttttt 180
gtatttttag tagagacagg gtttcacat gttggccagg ctggtctcaa actcctnacc 240
tcagnngtca ggctggctc aaactcctga cctcaagtga tctgcccacc tcagcctccc 300
aaagtgctan gattacaggc cgtgagcc

```

```

<210> 419
<211> 389
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (1)...(389)
<223> n = A,T,C or G

```

```

<400> 419
cctcctcaag acggcctgtg gtccgcctcc cggcaaccaa gaagcctgca gtgccatatg 60
acccctgagc catggactgg agcctgaaag gcagcgtaca ccctgctcct gatcttgctg 120
cttgtttcct ctctgtggct ccattcatag cacagtgtgt gcactgaggc ttgtgcaggc 180
cgagcaaggc caagctggct caaagagcaa ccagtcact ctgccacggg gtgccaggca 240
cgggttctcc agccaccaac ctcaactcgt cccgcaaatg gcacatcagt tcttctaccc 300
taaaggtagg accaaagggc atctgctttt ctgaagtcct ctgctctatc agccatcacg 360
tggcagccac tcnggctgtg tcgacgcgg

```

```

<210> 420
<211> 408
<212> DNA
<213> Homo sapiens

```

```

<400> 420
gttcctccta actcctgcc aaaaacagctc tcctcaacat gagagctgca cccctcctcc 60
tggccagggc agcaagcctt agccttgggt tcttggttct gctttttttc tggctagacc 120
gaagtgtact agccaaggag ttgaagtttg tgactttggt gtttcggcat ggagaccgaa 180
gtcccattga cacctttccc actgacccca taaaggaatc ctcatggcca caaggatttg 240
gccaactcac ccagctgggc atggagcagc attatgaact tggagagtat ataagaaaga 300
gatatagaaa attcttgaat gagtccata aacatgaaca ggtttatatt cgaagcacag 360
acgttgaccg gactttgatg aagtgcctatg aaaaacctgg caagcccg

```

```

<210> 421
<211> 352
<212> DNA
<213> Homo sapiens

```



<220>  
 <221> misc\_feature  
 <222> (1)...(352)  
 <223> n = A,T,C or G

<400> 421  
 gctcaaaaat ctttttactg atnggcatgg ctacacaatc attgactatt acggaggcca 60  
 gaggagaatg aggcctggcc tgggagccct gtgcctacta naagcacatt agattatcca 120  
 ttcactgaca gaacaggtct tttttgggtc cttcttctcc accacnatac attgacagtc 180  
 ctccctcttg aagattcttt ggcagttgtc tttgtcataa cccacaggtg tagaaacaag 240  
 ggtgcaacat gaaatttctg tttcgtagca agtgcatgtc tcacaagttg gcangtctgc 300  
 cactccgagt ttattgggtg tttgtttcct ttgagatcca tgcatttcct gg 352

<210> 422  
 <211> 337  
 <212> DNA  
 <213> Homo sapiens

<400> 422  
 atgccaccat gctggcaatg cagcgggcg tccaaggcct gcatatccag cccaagctgg 60  
 cgatgatcga cggcaaccgt tgcccgaagt tgccgatgcc agccgaagcg gtggtcaagg 120  
 gcgatagcaa ggtgccggcg atcgcggcgg cgtcaatcct ggccaaggtc agccgtgatc 180  
 gtgaaatggc agctgtcgaa ttgatctacc cgggttatgg catcggcggg cataagggtc 240  
 atccgacacc ggtgcacctg gaagccttgc agcggctggg gccgacgccg attcaccgac 300  
 gcttcttccg ccggtacggc tggcctatga aaattat 337

<210> 423  
 <211> 310  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)...(310)  
 <223> n = A,T,C or G

<400> 423  
 gctcaaaaat ctttttactg atatggcatg gctacacaat cattgactat tagaggccag 60  
 aggagaatga ggcctggcct gggagccctg tgccctacta aagcncatta gattatccat 120  
 tcaactgacag aacaggtctt ttttgggtcc ttcttctcca ccacgatata cttgcagtc 180  
 tccttcttga agattctttg gcagttgtct ttgtcataac ccacaggtgt anaaacaagg 240  
 gtgcaacatg aaatttctgt ttcgtagcaa gtgcatgtct cacagttgtc aagtctgccc 300  
 tccgagttta 310

<210> 424  
 <211> 370  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)...(370)  
 <223> n = A,T,C or G

<400> 424  
 gctcaaaaat ctttttactg ataggcatgg ctacacaatc attgactatt agaggccaga 60  
 ggagaatgag gcctggcctg ggagccctgt gcctactaga agcacattag attatccatt 120  
 cactgacaga acaggtcttt tttgggtcct tcttctccac cagcatatac ttgcagtcct 180  
 ccttcttgaa gattcttttg cagttgtctt tgtcataacc cacaggtgta gaaacatcct 240  
 ggttgaatct cctggaactc cctcattagg tatgaaatag catgatgcat tgcataaagt 300  
 cacgaagggt gcaaagatca caacgctgcc cagganaaca ttcattgtga taagcaggac 360  
 tccgtcgacg 370

<210> 425  
 <211> 216  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)...(216)  
 <223> n = A,T,C or G

<400> 425  
 aattgctatn ntttattttg ccactcaaaa taattaccaa aaaaaaaaaa tnttaaataga 60  
 taacaacnca acatcaaggn aaananaaca ggaatggntg actntgcata aatnggccga 120  
 anattatcca ttatnttaag ggttgacttc aggntacagc acacagacaa acatgcccag 180  
 gaggnntntca ggaccgctcg atgtntntng aggagg 216

<210> 426  
 <211> 596  
 <212> DNA  
 <213> Homo sapiens

<400> 426  
 cttccagtga ggataaccct gttgccccgg gccgagggttc tccattaggc tctgattgat 60  
 tggcagtcag tgatggaagg gtgttctgat cattccgact gcccgaaggg tcgctggcca 120  
 gctctctgtt ttgctgagtt ggcagtagga cctaatttgt taattaagag tagatggtga 180  
 gctgtccttg tattttgatt aacctaatgg ctttcccagc acgactcgga ttcagctgga 240  
 gacatcacgg caacttttaa tgaaatgatt tgaagggccca ttaagaggca cttcccgtta 300  
 ttaggcagtt catctgcact gataacttct tggcagctga gctggtcgga gctgtggccc 360  
 aaacgcacac ttggcttttg gttttgagat acaactctta atcttttagt catgcttgag 420  
 ggtggatggc cttttcagct ttaacccaat ttgactgcc ttggaagtgt agccaggaga 480  
 atacactcat atactcgtgg gcttagaggc cacagcagat gtcattggtc tactgcctga 540  
 gtcccgtggtg tcccatccca ggaccttcca tcggcgagta cctgggagcc cgtgct 596

<210> 427  
 <211> 107  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)...(107)  
 <223> n = A,T,C or G

<400> 427  
 gaagaattca agtttaggttt attcaaaggg cttacngaga atcctanacc caggncccag 60  
 cccgggagca gccttanaga gctcctgttt gactgcccgg ctcagng 107

<210> 428  
 <211> 38  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)...(38)  
 <223> n = A,T,C or G

<400> 428  
 gaacttcna anaangactt tattcactat tttacatt

38

<210> 429

137

<211> 544  
<212> DNA  
<213> Homo sapiens

<400> 429  
ctttgctgga cggaataaaaa gtggacgcaa gcatgacctc ctgatgaggg cgctgcattt 60  
attgaagagc ggctgcagcc ctgcggttca gattaaaatc cgagaattgt atagacgccg 120  
atatccacga actcttgaag gactttctga tttatccaca atcaaatcat cggttttcag 180  
tttgatgggt ggctcatcac ctgtagaacc tgacttggcc gtggctggaa tccactcgtt 240  
gccttccact tcagttacac ctcaactcacc atcctctcct gttgggttctg tgctgcttca 300  
agatactaag cccacatttg agatgcagca gccatctccc ccaattcctc ctgtccatcc 360  
tgatgtgcag ttaaaaaatc tgccctttta tgatgtcctt gatgttctca tcaagcccac 420  
gagtttagtt caaagcagta ttcagcgatt tcaagagaag ttttttattt ttgctttgac 480  
acctacaaca gttagagaga tatgcatatc cagggatatt ttgccagggt gtaggagaga 540  
ttat 544

<210> 430  
<211> 507  
<212> DNA  
<213> Homo sapiens

<220>  
<221> misc\_feature  
<222> (1)...(507)  
<223> n = A,T,C or G

<400> 430  
cttatcncaa tggggctccc aaacttggct gtgcagtgga aactccgggg gaattttgaa 60  
gaacactgac acccatcttc caccgcgaca ctctgattta attgggctgc agtgagaaca 120  
gagcatcaat ttaaaaagct gcccagaatg ttntcctggg cagcgttgtg atctttgccn 180  
ccttcgtgac tttatgcaat gcatcatgct atttcatacc taatgaggga gttccaggag 240  
attcaaccag gatgtttcta cncctgtggg ttatgacaaa gacaactgcc aaagaatntt 300  
caagaaggag gactgcaagt atatcgtggg ggagaagaag gacccaaaaa agacctgttc 360  
tgtcagtgaa tggataatct aatgtgcttc tagtaggcac agggctccca ggccaggcct 420  
cattctcctc tggcctctaa tagtcaatga ttgtgtagcc atgcctatca gtaaaaaagat 480  
ttttgagcaa aaaaaaaaaa aaaaaaa 507

<210> 431  
<211> 392  
<212> DNA  
<213> Homo sapiens

<220>  
<221> misc\_feature  
<222> (1)...(392)  
<223> n = A,T,C or G

<400> 431  
gaaaattcag aatggataaa aacaaatgaa gtacaaaata tttcagattt acatagcgat 60  
aaacaagaaa gcacttatca ggaggactta caaatggaag tacactctan aaccatcatc 120  
tatcatggct aaatgtgaga ttagcacagc tgtattattt gtacattgca aacacctaga 180  
aagagatggg aaacaaaatc ccaggagttt tgtgtgtgga gtcctgggtt ttccaacaga 240  
catcattcca gcattctgag attagggnga ttggggatca ttctggagtt ggaatgttca 300  
acaaaagtga tgttgtagg taaaatgtac aacttctgga tctatgcaga cattgaaggt 360  
gcaatgagtc tggcttttac tctgctgttt ct 392

<210> 432  
<211> 387  
<212> DNA  
<213> Homo sapiens

<220>

138

<221> misc\_feature  
 <222> (1)...(387)  
 <223> n = A,T,C or G

<400> 432  
 ggatccnta cataatcaaa tatagctgta gtacatgttt tcattggngt agattaccac 60  
 aaatgcaagg caacatgtgt agatctcttg tcttattctt ttgtctataa tactgtattg 120  
 ngtagtccaa gctctcggna gtccagccac tnggaaacat gctcccttta gattaacctc 180  
 gtggacnctn ttgttgnatt gtctgaactg tagngccctg tattttgctt ctgtctgnga 240  
 attctgttgc ttctggggca tticcttgng atgcagagga ccaccacaca gatgacagca 300  
 atctgaattg ntccaatcac agctgcgatt aagacatact gaaatcgtac aggaccggga 360  
 acaacgtata gaacactgga gtccttt 387

<210> 433  
 <211> 281  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)...(281)  
 <223> n = A,T,C or G

<400> 433  
 ttcaactagc anagaanact gcttcagggg gtgtaaaatg aaaggcttcc acgcagttat 60  
 ctgattaaag aacactaaga gagggacaag gctagaagcc gcaggatgtc tacactatag 120  
 caggcnctat ttgggttggc tggaggagct gtggaaaaca tggagagatt ggcgctggag 180  
 atcgccgtgg ctattcctcn ttgntattac accagnagg ntctctgtnt gccactgggt 240  
 tnnaaaaccg ntatacaata atgatagaat aggacacaca t 281

<210> 434  
 <211> 484  
 <212> DNA  
 <213> Homo sapiens

<400> 434  
 ttttaaaata agcatttagt gctcagtcce tactgagtac tctttctctc ccctcctctg 60  
 aatttaattc tttcaacttg caatttgcaa ggattacaca tttcactgtg atgtatattg 120  
 tgttgcaaaa aaaaaaaagt gtctttgttt aaaattactt ggtttgtgaa tccatcttgc 180  
 tttttcccca ttggaactag tcattaaccc atctctgaac tggtagaaaa acatctgaag 240  
 agctagtcta tcagcatctg acaggtgaat tggatggttc tcagaaccat ttcaccacaga 300  
 cagcctgttt ctatcctgtt taataaatta gtttgggttc tctacatgca taacaaaccc 360  
 tgctccaatc tgtcacataa aagtctgtga cttgaagttt agtcagcacc cccaccaaac 420  
 tttatttttc tatgtgtttt ttgcaacata tgagtgtttt gaaaataaag taccatgtc 480  
 tttta 484

<210> 435  
 <211> 424  
 <212> DNA  
 <213> Homo sapiens

<400> 435  
 ggcgcgtca gagcagggtca ctttctgcct tccacgtcct ctttcaagga agcccatgt 60  
 gggtagcttt caatatcgca ggttcttact cctctgcctc tataagctca aaccaccaa 120  
 cgatcgggca agtaaaccac ctccctcgcc gacttcggaa ctggcgagag ttcagcgag 180  
 atggcctgt ggggaggggg caagatagat gagggggagc ggcatggtgc ggggtgacct 240  
 cttggagaga ggaaaaaggc cacaagaggg gctgccaccg cactaaccgg agatggccct 300  
 ggtagagacc tttgggggtc tggaacctct ggactcccca tgctctaact cccacactct 360  
 gctatcagaa acttaaaactt gaggattttc tctgtttttc actcgcaata aattcagagc 420  
 aaac 424

<210> 436

<211> 667  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)...(667)  
 <223> n = A,T,C or G

<400> 436  
 accttgggaa nactctcaca atataaaggg tcgtagactt tactccaaat tccaaaaagg 60  
 tcctggccat gtaatcctga aagttttccc aaggtagcta taaaatcctt ataagggtgc 120  
 agcctcttct ggaattcctc tgatttcaaa gtctcactct caagttcttg aaaacgaggg 180  
 cagttcctga aaggcaggta tagcaactga tcttcagaaa gaggaactgt gtgcaccggg 240  
 atgggctgcc agagtaggat aggattccag atgctgacac cttctggggg aaacaggggt 300  
 gccaggtttg tcatagcact catcaaagtc cggccaacgt ctgtgcttcg aatataaacc 360  
 tgttcatgtt tataggactc attcaagaat tttctatatc tctttcttat atactctcca 420  
 agttcataat gctgctccat gcccagctgg gtgagttggc caaatccttg tggccatgag 480  
 gattccttta tggggtcagt gggaaagggt tcaatgggac ttcgggtctcc atgccgaac 540  
 accaaagtca caaacttcaa ctccctgggt agtacacttc ggtctagcca gaaaaaagc 600  
 agaaacaaga agccaaggct aaggcttgct gccctgccag gaggaggggt gcagctctca 660  
 tgttgag 667

<210> 437  
 <211> 693  
 <212> DNA  
 <213> Homo sapiens

<400> 437  
 ctacgtctca accctcattt ttaggtaagg aatcttaagt ccaaagatat taagtgactc 60  
 acacagccag gtaaggaaaag ctggattggc acactaggac tctaccatac cgggttttgt 120  
 taaagctcag gttaggaggc tgataagctt ggaaggaaact tcagacagct ttttcagatc 180  
 ataaaagata attcttagcc catgttcttc tccagagcag acctgaaatg acagcacagc 240  
 aggtactcct ctattttcac ccctcttgct tctactctct ggcagtcaga cctgtgggag 300  
 gccatgggag aaagcagctc tctggatgtt tgtacagatc atggactatt ctctgtggac 360  
 catttctcca ggttacccta ggtgtcacta ttggggggac agccagcatc tttagctttc 420  
 atttgagttt ctgtctgtct tcagtagagg aaacttttgc tcttcacact tcacatctga 480  
 acacctaact gctgttgctc ctgaggtggg gaaagacaga tatagagctt acagtattta 540  
 tcctatttct aggcactgag ggctgtgggg taccttgtgg tgccaaaaca gatcctgttt 600  
 taaggacatg ttgcttcaga gatgtctgta actatctggg ggctctgttg gctctttacc 660  
 ctgcatcatg tgctctcttg gctgaaaatg acc 693

<210> 438  
 <211> 360  
 <212> DNA  
 <213> Homo sapiens

<400> 438  
 ctgcttatca caatgaatgt tctcctgggc agcgttgtga tctttgccac cttcgtgact 60  
 ttatgcaatg catcatgcta tttcatacct aatgaggagg ttccaggaga ttcaaccagg 120  
 atgtttctac acctgtgggt tatgacaaaag acaactgcc aagaatcttc aagaaggagg 180  
 actgcaagta tatctgggtg agaagaagga cccaaaaaag acctgttctg tcagtgaatg 240  
 gataatctaa tgtgcttcta gtaggcacag ggctcccagg ccaggcctca ttctcctctg 300  
 gcctctaata gtcaataatt gtgtagccat gcctatcagt aaaaagattt ttgagcaaac 360

<210> 439  
 <211> 431  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature

&lt;222&gt; (1)...(431)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 439

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gttcctnnta actcctgcca gaaacagctc tcctcaacat gagagctgca cccctcctcc 60
tgGCCagggc agcaagcctt agccttggtt tcttgtttct gctttttttc tggctagacc 120
gaagtgtact agccaaggag ttgaagtttg tgacttttgt gtttcggcat ggagaccgaa 180
gtcccattga cacctttccc actgacccca taaaggaatc ctcatggcca caaggatttg 240
gccaactcac ccagctgggc atggagcagc attatgaact tggagagtat ataagaaaga 300
gatatagaaa attccttgaat gagtcctata aacatgaaca ggtttatatt cgaagcacag 360
acgttgaccg gactttgatg agtgctatga caaacctggc agcccgtcga cgcggccgcg 420
aatttagtag t                                     431

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&lt;210&gt; 440

&lt;211&gt; 523

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 440

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agagataaaG cttaggtcaa agttcataga gttcccatga actatatgac tggccacaca 60
ggatcttttg tatttaagga ttctgagatt ttgcttgagc aggattagat aaggctgttc 120
tttaaagtgc tgaaatggaa cagatttcaa aaaaaaaccc cacaatctag ggtgggaaca 180
aggaaggaaa gatgtgaata ggctgatggg caaaaaacca atttaccat cagttccagc 240
cttctctcaa ggagaggcaa agaaaggaga tacagtggag acatctggaa agttttctcc 300
actggaaaac tgctactatc tgtttttata tttctgttaa aatatatgag gctacagaac 360
taaaaatttaa aacctctttg tgtcccttgg tcctggaaca tttatgttcc ttttaaagaa 420
acaaaaatca aactttacag aaagatttga tgtatgtaac acatatagca gctcttgaag 480
tatatatatc atagcaaata agtcactctga tgagaacaag cta                                     523

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&lt;210&gt; 441

&lt;211&gt; 430

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 441

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gttcctccta actcctgcca gaaacagctc tcctcaacat gagagctgca cccctcctcc 60
tgGCCagggc agcaagcctt agccttggtt tcttgtttct gctttttttc tggctagacc 120
gaagtgtact agccaaggag ttgaagtttg tgacttttgt gtttcggcat ggagaccgaa 180
gtcccattga cacctttccc actgacccca taaaggaatc ctcatggcca caaggatttg 240
gccaactcac ccagctgggc atggagcagc attatgaact tggagagtat ataagaaaga 300
gatatagaaa attccttgaat gagtcctata aacatgaaca ggtttatatt cgaagcacag 360
acgttgaccg gactttgatg agtgctatga caaacctggc agcccgtcga cgcggccgcg 420
aatttagtag                                     430

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&lt;210&gt; 442

&lt;211&gt; 362

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 442

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ctaaggaaatt agtagtggtc ccatcacttg tttggagtgt gctatttctaa aagattttga 60
tttcctggaa tgacaattat attttaactt tgggtgggga aagagttata ggaccacagt 120
cttcacttct gatacttgta aattaatctt ttattgcact tgttttgacc attaagctat 180
atgttttagaa atggtcattt tacggaaaaa ttagaaaaat tctgataata gtgcagaata 240
aatgaatttaa tgttttactt aatttatatt gaactgtcaa tgacaaaata aaattctttt 300
tgattatttt ttgttttcat ttaccagaat aaaaactaag aattaaaagt ttgattacag 360
tc                                     362

```

&lt;210&gt; 443

&lt;211&gt; 624

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

<220>  
<221> misc\_feature  
<222> (1)...(624)  
<223> n = A,T,C or G

<400> 443  
ttttttttttt gcaacacaat atacatcaca gtgaaatgtg taatccttgc aaattgcaag 60  
ttgaaagaat taaattcaga ggaggggaga gaaagagtag tcagtaggga ctgagcacta 120  
aatgcttatt ttaaaagaaa tgtaaagagc agaaagcaat tcaggctacc ctgccttttg 180  
tgctggctag tactccggtc ggtgtcagca gcacgtggca ttgaacattg caatgtggag 240  
cccaaaccac agaaaatggg gtgaaattgg ccaactttct attaacttgg cttcctgttt 300  
tataaaatat tgtgaataat atcacctact tcaaagggca gttatgaggc ttaaatgaac 360  
taacgcctac aaaacactta aacatagata acatagggtg aagtactatg tatctggtac 420  
atggtaaaca tccttattat taaagtcaac gctaaaatga atgtgtgtgc atatgctaata 480  
agtacagaga gagggcactt aaaccaacta agggcctgga gggaagggtt cctggaaaga 540  
ngatgcttgt gctgggtcca aatcttgggt tactatgacc ttggccaaat tatttaaact 600  
ttgtccctat ctgctaaaca gatc 624

<210> 444  
<211> 425  
<212> DNA  
<213> Homo sapiens

<220>  
<221> misc\_feature  
<222> (1)...(425)  
<223> n = A,T,C or G

<400> 444  
gcacatcatt nntcttgcatt tctttgagaa taagaagatc agtaaatagt tcagaagtgg 60  
gaagctttgt ccaggcctgt gtgtgaaccc aatgttttgc ttagaaatag aacaagtaag 120  
ttcattgcta tagcataaca caaaatttgc ataagtgggtg gtcagcaaat ccttgaatgc 180  
tgcttaatgt gagagggttg taaaatcctt tgtgcaacac tctaactccc tgaatgtttt 240  
gctgtgctgg gacctgtgca tgccagacaa ggccaagctg gctgaaagag caaccagcca 300  
cctctgcaat ctgccacctc ctgctggcag gatttgtttt tgcacacctg gaagagccaa 360  
ggaggcacca gggcataagt gagtagactt atggtcgacg cggccgcgaa tttagtagta 420  
gtaga 425

<210> 445  
<211> 414  
<212> DNA  
<213> Homo sapiens

<220>  
<221> misc\_feature  
<222> (1)...(414)  
<223> n = A,T,C or G

<400> 445  
catgtttatg nttttggatt actttgggca cctagtgttt ctaaatcgtc tatcattctt 60  
ttctgttttt caaaagcaga gatggccaga gtctcaacaa actgtatctt caagtctttg 120  
tgaaattctt tgcatgtggc agattatttg atgtagtttc ctttaactag catataaatc 180  
tggtgtgttt cagataaatg aacagcaaaa tgtggtggaa ttaccatttg gaacattgtg 240  
aatgaaaaat tgtgtctcta gattatgtaa caaataacta tttcctaacc attgatcttt 300  
ggatttttat aatcctactc acaaatagact aggtctctcc tcttgtattt tgaagcagtg 360  
tggtgtctgg attgataaaa aaaaaaaaaa tcgacgcggc cgcgaattta gtag 414

<210> 446  
<211> 631  
<212> DNA  
<213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)...(631)  
 <223> n = A,T,C or G

<400> 446  
 acaaattaga anaaagtgcc agagaacacc acataccttg tccggaacat tacaatggct 60  
 tctgcatgca tgggaagtgt gagcattcta tcaatatgca ggagccatct tgcagggtgtg 120  
 atgctgggta tactggacaa cactgtgaaa aaaaggacta cagtgttcta tacgttggtc 180  
 ccggtcctgt acgatttcag tatgtcttaa tcgcagctgt gattggaaca attcagattg 240  
 ctgtcatctg tgtgggtggtc ctctgcatca caagggccaa actttaggta atagcattgg 300  
 actgagattt gtaaactttc caaccttcca ggaaatgccc cagaagcaac agaattcaca 360  
 gacagaagca aaatacaggg cactacagtt cagacaatac aacaagagcg tccacgaggt 420  
 taatctaaag ggagcatggt tcacagtggc tggactaccg agagcttgga ctacacaata 480  
 cagtattata gacaaaagaa taagacaaga gatctacaca tgttgccctg catttggtgtg 540  
 aatctacacc aatgaaaaca tgtactacag ctatatattga ttatgtatgg atatatattga 600  
 aatagtatac attgtcttga tgttttttct g 631

<210> 447  
 <211> 585  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)...(585)  
 <223> n = A,T,C or G

<400> 447  
 ccttgaggaaa antntcacaa tataaagggt cgtagacttt actccaaatt ccaaaaaggt 60  
 cctggccatg taatcctgaa agttttccca aggtagctat aaaatcctta taagggtgca 120  
 gcctcttctg gaattcctct gatttcaaag tctcactctc aagttcttga aaacgagggc 180  
 agttcctgaa aggcaggtat agcaactgat cttcagaaag aggaactgtg tgcaccggga 240  
 tgggctgccg gagtaggata ggattccaga tgctgacacc ttctggggga aacagggctg 300  
 ccaggtttgt catagcactc atcaaagtcc ggtcaacgtc tgtgcttcga atataaacct 360  
 gttcatgttt ataggactca ttcaagaatt ttctatatct ctttcttata tactctccaa 420  
 gttcataatg ctgctccatg cccagctggg tgagttggcc aaatccttgt ggccatgagg 480  
 attcctttat ggggtcagtg ggaaagggtg caatgggact tcggtctcca tgccgaaaca 540  
 ccaaagtcac aaacttcaac tccttggcta gtacacttcg gtcta 585

<210> 448  
 <211> 93  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)...(93)  
 <223> n = A,T,C or G

<400> 448  
 tgctcgtggg tcattctgan nnccgaactg acctgccag ccctgccgan gggccnccat 60  
 ggctccctag tgccctggag agganggggc tag 93

<210> 449  
 <211> 706  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature



&lt;222&gt; (1)...(706)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 449

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&lt;210&gt; 450

&lt;211&gt; 493

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 450

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gcgaatttag tag 493

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&lt;210&gt; 451

&lt;211&gt; 501

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(501)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 451

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&lt;210&gt; 452

&lt;211&gt; 51

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(51)

144

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 452

agacggtttc accnttaciaa cnccttttag gatgggnntt ggggagcaag c 51

&lt;210&gt; 453

&lt;211&gt; 317

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(317)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 453

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&lt;210&gt; 454

&lt;211&gt; 231

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 454

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agaagaccaa	attcttctgc	atcccagctt	gcaaacaana	ttgttcttct	aggtctccac	180
ccttcctttt	tcagtgttcc	aaagctcctc	acaatttcat	gaacaacagc	t	231

&lt;210&gt; 455

&lt;211&gt; 231

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 455

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caaagaattt	ctcatagcac	agctcacaat	acagggtctc	tttctcctct	a	231

&lt;210&gt; 456

&lt;211&gt; 231

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 456

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tgcaactcaa	ttcctttatc	aggaataact	acatagccac	tatttacaaa	gccattggaa	180
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&lt;210&gt; 457

&lt;211&gt; 231

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

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 <223> n = A,T,C or G

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 tatttgattt tattagcaat ctctttcaga agacccttga gatcattaag ctttgtatcc 180  
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 <212> DNA  
 <213> Homo sapiens

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 ggtcctgggt taggcatttt gggggggccag accccaggag aagaagattc t 231

<210> 459  
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 <212> DNA  
 <213> Homo sapiens

<400> 459  
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 cccacctccc cacacgcaca cggccagcct ggagcccaca gaagggtcct cctgcagcca 180  
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 <213> Homo sapiens

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 <212> DNA  
 <213> Homo sapiens

<400> 462  
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146

gaagaactgt tagagagacc aacagggtag tgggttagag atttccagag tcttacattt 180  
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&lt;210&gt; 463

&lt;211&gt; 231

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 463

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tggggagggtg gatcttccag tcgaagcggt atagaagccc gtgtgaaaag c 231

&lt;210&gt; 464

&lt;211&gt; 231

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 464

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&lt;210&gt; 465

&lt;211&gt; 231

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 465

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taaactggag acatgcagga cattagggta gtgttgtagc tctggtaatg a 231

&lt;210&gt; 466

&lt;211&gt; 231

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 466

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&lt;210&gt; 467

&lt;211&gt; 311

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 467

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ctgcagcaga c 311

&lt;210&gt; 468

&lt;211&gt; 3112

&lt;212&gt; DNA

&lt;213&gt; Homo sapi ns

&lt;400&gt; 468

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&lt;210&gt; 469

&lt;211&gt; 2229

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 469

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aatggaatt
2229

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&lt;210&gt; 470

&lt;211&gt; 2426

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 470

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aagtgggaaa tgaatttcag tatgggcaaa gacactgagg atgatgttga ttagataatt 900
cactccgtaa tgatcatgct gtgtgctagt aagtataacc ctggaagat cttgagatgc 960

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ttcccagcct gttcacagat cccctgggcc agaacactcc ttaggaaaaa cagtcagcta 1020
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agaaagggtca cagtacagat ctgggaacta aatattaaaa atgagtgtgg ctggatata 1140
ggagaatgtt gggcccagaa ggaaccgtag agatcagata ttacaacagc tttgttttga 1200
gggttagaaa tatgaaatga tttggttatg aacgcacagt ttaggcagca gggccagaat 1260
cctgaccctc tgccccgtgg ttatctcctc cccagcttgg ctgcctcatg tcatcacagt 1320
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ctcattggta atgctcactt tgtgacttca tttcaaatct gtaatcccg tcaaatataat 1440
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atgtccttcc ctcaaacgag ggaccaggca cagggcgagg ctcatcgatg acccaagatg 1560
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atacaaaaat tagctgggag tgctggtgca tgctgtaat cccagctact tgggaggctg 2220
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tgactcga cctgggagac agagtggaa tctgtttcca aaaaacaaac aaacaaaaaa 2340
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<211> 812
<212> DNA
<213> Homo sapiens

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gagatcagat attacaacag ctttgttttg agggtagaa atatgaaatg atttggttat 180
gaacgcacag tttaggcagc agggccagaa tctgacct ctgcccgtg gttatctcct 240
ccccagcttg gctgcctcat gtcacacag tattccattt tgtttgttg atgtcttg 300
aagccatcaa gattttctcg tctgttttcc tctcattggg aatgctcact ttgtgacttc 360
atttcaaata tgtaatcccg ttcaataaaa tatccacaac aggatctgtt ttctgcccc 420
tcctttaagg aacacatcaa ttcatthtct aatgtccttc cctcacaagc gggaccaggc 480
acagggcgag gctcatcgat gaccaagat ggcggccggg catttctccc agggatctct 540
gtgcttccct ttgtgcttcc tgtgtgtgtg gatattttaa ggggctggaa atgtgcaaaa 600
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ccatttcagc agatgtgtgg cctcagatgg taaagtcagc agcctttctt atttctcacc 720
tctgtatcat caggtccttc ccaccatgca gatcttccct gtctccctcg gctgcagcca 780
cacaatatct ccctctgttt ttctgatgcc ag 812

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<210> 472
<211> 515
<212> DNA
<213> Homo sapiens

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gttccagaat tattgggtcct tgcagcccgg tgaatctcag caagaggaac caccaactga 180
caatcaggat attgaacctg gacaagagag agaaggaaca cctccgatcg aagaacgtaa 240

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150

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agtagaaggt gattgccagg aaatggatct ggaaaagact cggagtgagc gtggagatgg 300
ctctgatgta aaagagaaga ctccacctaa tcctaagcat gctaagacta aagaagcagg 360
agatgggcag ccataagtta aaaagaagac aagctgaagc tacacacatg gctgatgtca 420
cattgaaaat gtgactgaaa atttgaaaat tctctcaata aagtttgagt tttctctgaa 480
gaaaaaaaaa naaaaaaaaa aaanaaaaaa aaaaaa 515

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&lt;210&gt; 473

&lt;211&gt; 750

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 473

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Arg Pro Arg Trp Leu Cys Ala Gly Ala Leu Val Leu Ala Gly Gly Phe
      20              25              30
Phe Leu Leu Gly Phe Leu Phe Gly Trp Phe Ile Lys Ser Ser Asn Glu
      35              40              45
Ala Thr Asn Ile Thr Pro Lys His Asn Met Lys Ala Phe Leu Asp Glu
      50              55              60
Leu Lys Ala Glu Asn Ile Lys Lys Phe Leu Tyr Asn Phe Thr Gln Ile
      65              70              75              80
Pro His Leu Ala Gly Thr Glu Gln Asn Phe Gln Leu Ala Lys Gln Ile
      85              90              95
Gln Ser Gln Trp Lys Glu Phe Gly Leu Asp Ser Val Glu Leu Ala His
      100             105             110
Tyr Asp Val Leu Leu Ser Tyr Pro Asn Lys Thr His Pro Asn Tyr Ile
      115             120             125
Ser Ile Ile Asn Glu Asp Gly Asn Glu Ile Phe Asn Thr Ser Leu Phe
      130             135             140
Glu Pro Pro Pro Pro Gly Tyr Glu Asn Val Ser Asp Ile Val Pro Pro
      145             150             155             160
Phe Ser Ala Phe Ser Pro Gln Gly Met Pro Glu Gly Asp Leu Val Tyr
      165             170             175
Val Asn Tyr Ala Arg Thr Glu Asp Phe Phe Lys Leu Glu Arg Asp Met
      180             185             190
Lys Ile Asn Cys Ser Gly Lys Ile Val Ile Ala Arg Tyr Gly Lys Val
      195             200             205
Phe Arg Gly Asn Lys Val Lys Asn Ala Gln Leu Ala Gly Ala Lys Gly
      210             215             220
Val Ile Leu Tyr Ser Asp Pro Ala Asp Tyr Phe Ala Pro Gly Val Lys
      225             230             235             240
Ser Tyr Pro Asp Gly Trp Asn Leu Pro Gly Gly Gly Val Gln Arg Gly
      245             250             255
Asn Ile Leu Asn Leu Asn Gly Ala Gly Asp Pro Leu Thr Pro Gly Tyr

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Pro	Ala	Asn	Glu	Tyr	Ala	Tyr	Arg	Arg	Gly	Ile	Ala	Glu	Ala	Val	Gly
		275					280					285			
Leu	Pro	Ser	Ile	Pro	Val	His	Pro	Ile	Gly	Tyr	Tyr	Asp	Ala	Gln	Lys
		290				295					300				
Leu	Leu	Glu	Lys	Met	Gly	Gly	Ser	Ala	Pro	Pro	Asp	Ser	Ser	Trp	Arg
		305				310					315				320
Gly	Ser	Leu	Lys	Val	Pro	Tyr	Asn	Val	Gly	Pro	Gly	Phe	Thr	Gly	Asn
				325					330					335	
Phe	Ser	Thr	Gln	Lys	Val	Lys	Met	His	Ile	His	Ser	Thr	Asn	Glu	Val
			340					345					350		
Thr	Arg	Ile	Tyr	Asn	Val	Ile	Gly	Thr	Leu	Arg	Gly	Ala	Val	Glu	Pro
			355				360					365			
Asp	Arg	Tyr	Val	Ile	Leu	Gly	Gly	His	Arg	Asp	Ser	Trp	Val	Phe	Gly
		370				375					380				
Gly	Ile	Asp	Pro	Gln	Ser	Gly	Ala	Ala	Val	Val	His	Glu	Ile	Val	Arg
		385				390					395				400
Ser	Phe	Gly	Thr	Leu	Lys	Lys	Glu	Gly	Trp	Arg	Pro	Arg	Arg	Thr	Ile
				405					410					415	
Leu	Phe	Ala	Ser	Trp	Asp	Ala	Glu	Glu	Phe	Gly	Leu	Leu	Gly	Ser	Thr
			420					425					430		
Glu	Trp	Ala	Glu	Glu	Asn	Ser	Arg	Leu	Leu	Gln	Glu	Arg	Gly	Val	Ala
		435					440					445			
Tyr	Ile	Asn	Ala	Asp	Ser	Ser	Ile	Glu	Gly	Asn	Tyr	Thr	Leu	Arg	Val
		450				455					460				
Asp	Cys	Thr	Pro	Leu	Met	Tyr	Ser	Leu	Val	His	Asn	Leu	Thr	Lys	Glu
		465				470					475				480
Leu	Lys	Ser	Pro	Asp	Glu	Gly	Phe	Glu	Gly	Lys	Ser	Leu	Tyr	Glu	Ser
				485					490					495	
Trp	Thr	Lys	Lys	Ser	Pro	Ser	Pro	Glu	Phe	Ser	Gly	Met	Pro	Arg	Ile
			500					505					510		
Ser	Lys	Leu	Gly	Ser	Gly	Asn	Asp	Phe	Glu	Val	Phe	Phe	Gln	Arg	Leu
		515					520					525			
Gly	Ile	Ala	Ser	Gly	Arg	Ala	Arg	Tyr	Thr	Lys	Asn	Trp	Glu	Thr	Asn
		530				535					540				
Lys	Phe	Ser	Gly	Tyr	Pro	Leu	Tyr	His	Ser	Val	Tyr	Glu	Thr	Tyr	Glu
		545				550					555				560
Leu	Val	Glu	Lys	Phe	Tyr	Asp	Pro	Met	Phe	Lys	Tyr	His	Leu	Thr	Val
				565					570					575	
Ala	Gln	Val	Arg	Gly	Gly	Met	Val	Phe	Glu	Leu	Ala	Asn	Ser	Ile	Val
			580					585					590		

152

Leu Pro Phe Asp Cys Arg Asp Tyr Ala Val Val Leu Arg Lys Tyr Ala  
           595                                600                                605  
 Asp Lys Ile Tyr Ser Ile Ser Met Lys His Pro Gln Glu Met Lys Thr  
           610                                615                                620  
 Tyr Ser Val Ser Phe Asp Ser Leu Phe Ser Ala Val Lys Asn Phe Thr  
           625                                630                                635                                640  
 Glu Ile Ala Ser Lys Phe Ser Glu Arg Leu Gln Asp Phe Asp Lys Ser  
                                 645                                650                                655  
 Asn Pro Ile Val Leu Arg Met Met Asn Asp Gln Leu Met Phe Leu Glu  
                                 660                                665                                670  
 Arg Ala Phe Ile Asp Pro Leu Gly Leu Pro Asp Arg Pro Phe Tyr Arg  
           675                                680                                685  
 His Val Ile Tyr Ala Pro Ser Ser His Asn Lys Tyr Ala Gly Glu Ser  
           690                                695                                700  
 Phe Pro Gly Ile Tyr Asp Ala Leu Phe Asp Ile Glu Ser Lys Val Asp  
           705                                710                                715                                720  
 Pro Ser Lys Ala Trp Gly Glu Val Lys Arg Gln Ile Tyr Val Ala Ala  
                                 725                                730                                735  
 Phe Thr Val Gln Ala Ala Ala Glu Thr Leu Ser Glu Val Ala  
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 <212> PRT  
 <213> Homo sapiens

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 Gly Phe Leu Phe Leu Leu Phe Phe Trp Leu Asp Arg Ser Val Leu Ala  
                                 20                                25                                30  
 Lys Glu Leu Lys Phe Val Thr Leu Val Phe Arg His Gly Asp Arg Ser  
           35                                40                                45  
 Pro Ile Asp Thr Phe Pro Thr Asp Pro Ile Lys Glu Ser Ser Trp Pro  
           50                                55                                60  
 Gln Gly Phe Gly Gln Leu Thr Gln Leu Gly Met Glu Gln His Tyr Glu  
           65                                70                                75                                80  
 Leu Gly Glu Tyr Ile Arg Lys Arg Tyr Arg Lys Phe Leu Asn Glu Ser  
                                 85                                90                                95  
 Tyr Lys His Glu Gln Val Tyr Ile Arg Ser Thr Asp Val Asp Arg Thr  
           100                                105                                110  
 Leu Met Ser Ala Met Thr Asn Leu Ala Ala Leu Phe Pro Pro Glu Gly  
           115                                120                                125  
 Val Ser Ile Trp Asn Pro Ile Leu Leu Trp Gln Pro Ile Pro Val His

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<210> 475
<211> 261
<212> PRT
<213> Homo sapiens
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155

Val Ala Ser Arg Gly Arg Ala Val Cys Gly Gly Val Leu Val His Pro  
 50 55 60  
 Gln Trp Val Leu Thr Ala Ala His Cys Ile Arg Asn Lys Ser Val Ile  
 65 70 75 80  
 Leu Leu Gly Arg His Ser Leu Phe His Pro Glu Asp Thr Gly Gln Val  
 85 90 95  
 Phe Gln Val Ser His Ser Phe Pro His Pro Leu Tyr Asp Met Ser Leu  
 100 105 110  
 Leu Lys Asn Arg Phe Leu Arg Pro Gly Asp Asp Ser Ser His Asp Leu  
 115 120 125  
 Met Leu Leu Arg Leu Ser Glu Pro Ala Glu Leu Thr Asp Ala Val Lys  
 130 135 140  
 Val Met Asp Leu Pro Thr Gln Glu Pro Ala Leu Gly Thr Thr Cys Tyr  
 145 150 155 160  
 Ala Ser Gly Trp Gly Ser Ile Glu Pro Glu Glu Phe Leu Thr Pro Lys  
 165 170 175  
 Lys Leu Gln Cys Val Asp Leu His Val Ile Ser Asn Asp Val Cys Ala  
 180 185 190  
 Gln Val His Pro Gln Lys Val Thr Lys Phe Met Leu Cys Ala Gly Arg  
 195 200 205  
 Trp Thr Gly Gly Lys Ser Thr Cys Ser Gly Asp Ser Gly Gly Pro Leu  
 210 215 220  
 Val Cys Asn Gly Val Leu Gln Gly Ile Thr Ser Trp Gly Ser Glu Pro  
 225 230 235 240  
 Cys Ala Leu Pro Glu Arg Pro Ser Leu Tyr Thr Lys Val Val His Tyr  
 245 250 255  
 Arg Lys Trp Ile Lys Asp Thr Ile Val Ala Asn Pro Gly Ser Met Ala  
 260 265 270  
 Thr Ala Gly Asn Pro Trp Gly Trp Phe Leu Gly Tyr Leu Ile Leu Gly  
 275 280 285  
 Val Ala Gly Ser Leu Val Ser Gly Ser Cys Ser Gln Ile Ile Asn Gly  
 290 295 300  
 Glu Asp Cys Ser Pro His Ser Gln Pro Trp Gln Ala Ala Leu Val Met  
 305 310 315 320  
 Glu Asn Glu Leu Phe Cys Ser Gly Val Leu Val His Pro Gln Trp Val  
 325 330 335  
 Leu Ser Ala Ala His Cys Phe Gln Asn Ser Tyr Thr Ile Gly Leu Gly  
 340 345 350  
 Leu His Ser Leu Glu Ala Asp Gln Glu Pro Gly Ser Gln Met Val Glu  
 355 360 365  
 Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Pro Leu Leu Ala  
 370 375 380

Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser Glu Ser Asp  
 385 390 395 400  
 Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr Ala Gly Asn  
 405 410 415  
 Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Gly Arg Met Pro  
 420 425 430  
 Thr Val Leu Gln Cys Val Asn Val Ser Val Val Ser Glu Glu Val Cys  
 435 440 445  
 Ser Lys Leu Tyr Asp Pro Leu Tyr His Pro Ser Met Phe Cys Ala Gly  
 450 455 460  
 Gly Gly Gln Asp Gln Lys Asp Ser Cys Asn Gly Asp Ser Gly Gly Pro  
 465 470 475 480  
 Leu Ile Cys Asn Gly Tyr Leu Gln Gly Leu Val Ser Phe Gly Lys Ala  
 485 490 495  
 Pro Cys Gly Gln Val Gly Val Pro Gly Val Tyr Thr Asn Leu Cys Lys  
 500 505 510  
 Phe Thr Glu Trp Ile Glu Lys Thr Val Gln Ala Ser Glu Phe Met Val  
 515 520 525  
 Gln Arg Leu Trp Val Ser Arg Leu Leu Arg His Arg Lys Ala Gln Leu  
 530 535 540  
 Leu Leu Val Asn Leu Leu Thr Phe Gly Leu Glu Val Cys Leu Ala Ala  
 545 550 555 560  
 Gly Ile Thr Tyr Val Pro Pro Leu Leu Leu Glu Val Gly Val Glu Glu  
 565 570 575  
 Lys Phe Met Thr Met Val Leu Gly Ile Gly Pro Val Leu Gly Leu Val  
 580 585 590  
 Cys Val Pro Leu Leu Gly Ser Ala Ser Asp His Trp Arg Gly Arg Tyr  
 595 600 605  
 Gly Arg Arg Arg Pro Phe Ile Trp Ala Leu Ser Leu Gly Ile Leu Leu  
 610 615 620  
 Ser Leu Phe Leu Ile Pro Arg Ala Gly Trp Leu Ala Gly Leu Leu Cys  
 625 630 635 640  
 Pro Asp Pro Arg Pro Leu Glu Leu Ala Leu Leu Ile Leu Gly Val Gly  
 645 650 655  
 Leu Leu Asp Phe Cys Gly Gln Val Cys Phe Thr Pro Leu Glu Ala Leu  
 660 665 670  
 Leu Ser Asp Leu Phe Arg Asp Pro Asp His Cys Arg Gln Ala Tyr Ser  
 675 680 685  
 Val Tyr Ala Phe Met Ile Ser Leu Gly Gly Cys Leu Gly Tyr Leu Leu  
 690 695 700  
 Pro Ala Ile Asp Trp Asp Thr Ser Ala Leu Ala Pro Tyr Leu Gly Thr

705		710		715		720
Gln Glu Glu Cys	Leu Phe Gly Leu Leu Thr	Leu Ile Phe Leu Thr Cys				
	725		730			735
Val Ala Ala Thr	Leu Leu Val Ala Glu Glu Ala Ala Leu Gly Pro Thr					
	740		745			750
Glu Pro Ala Glu Gly Leu Ser Ala Pro Ser Leu Ser Pro His Cys Cys						
	755		760			765
Pro Cys Arg Ala Arg Leu Ala Phe Arg Asn Leu Gly Ala Leu Leu Pro						
	770		775			780
Arg Leu His Gln Leu Cys Cys Arg Met Pro Arg Thr Leu Arg Arg Leu						
	785		790			795
Phe Val Ala Glu Leu Cys Ser Trp Met Ala Leu Met Thr Phe Thr Leu						
	805		810			815
Phe Tyr Thr Asp Phe Val Gly Glu Gly Leu Tyr Gln Gly Val Pro Arg						
	820		825			830
Ala Glu Pro Gly Thr Glu Ala Arg Arg His Tyr Asp Glu Gly Val Arg						
	835		840			845
Met Gly Ser Leu Gly Leu Phe Leu Gln Cys Ala Ile Ser Leu Val Phe						
	850		855			860
Ser Leu Val Met Asp Arg Leu Val Gln Arg Phe Gly Thr Arg Ala Val						
	865		870			875
Tyr Leu Ala Ser Val Ala Ala Phe Pro Val Ala Ala Gly Ala Thr Cys						
	885		890			895
Leu Ser His Ser Val Ala Val Val Thr Ala Ser Ala Ala Leu Thr Gly						
	900		905			910
Phe Thr Phe Ser Ala Leu Gln Ile Leu Pro Tyr Thr Leu Ala Ser Leu						
	915		920			925
Tyr His Arg Glu Lys Gln Val Phe Leu Pro Lys Tyr Arg Gly Asp Thr						
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Gly Gly Ala Ser Ser Glu Asp Ser Leu Met Thr Ser Phe Leu Pro Gly						
	945		950			955
Pro Lys Pro Gly Ala Pro Phe Pro Asn Gly His Val Gly Ala Gly Gly						
	965		970			975
Ser Gly Leu Leu Pro Pro Pro Pro Ala Leu Cys Gly Ala Ser Ala Cys						
	980		985			990
Asp Val Ser Val Arg Val Val Val Gly Glu Pro Thr Glu Ala Arg Val						
	995		1000			1005
Val Pro Gly Arg Gly Ile Cys Leu Asp Leu Ala Ile Leu Asp Ser Ala						
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Phe Leu Leu Ser Gln Val Ala Pro Ser Leu Phe Met Gly Ser Ile Val						
	1025		1030			1035
						1040

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Gln Leu Ser Gln Ser Val Thr Ala Tyr Met Val Ser Ala Ala Gly Leu  
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Gly Leu Val Ala Ile Tyr Phe Ala Thr Gln Val Val Phe Asp Lys Ser  
1060 1065 1070

Asp Leu Ala Lys Tyr Ser Ala  
1075



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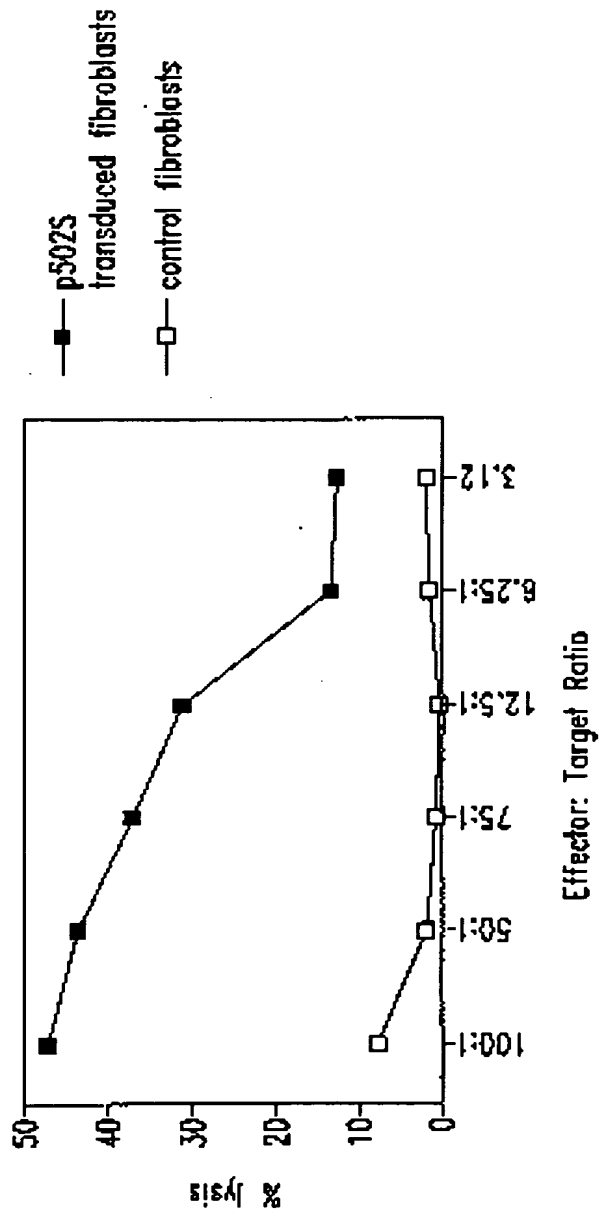
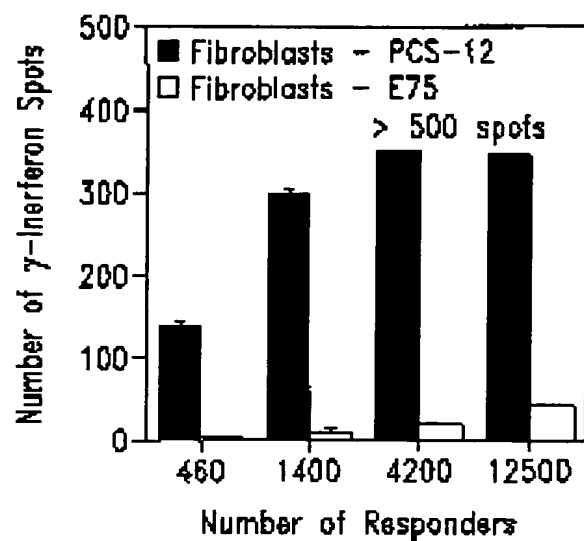
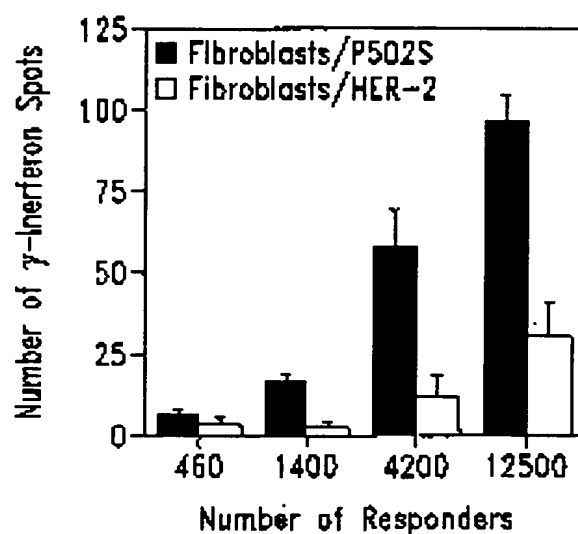


Fig. 1

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*Fig. 2A**Fig. 2B*

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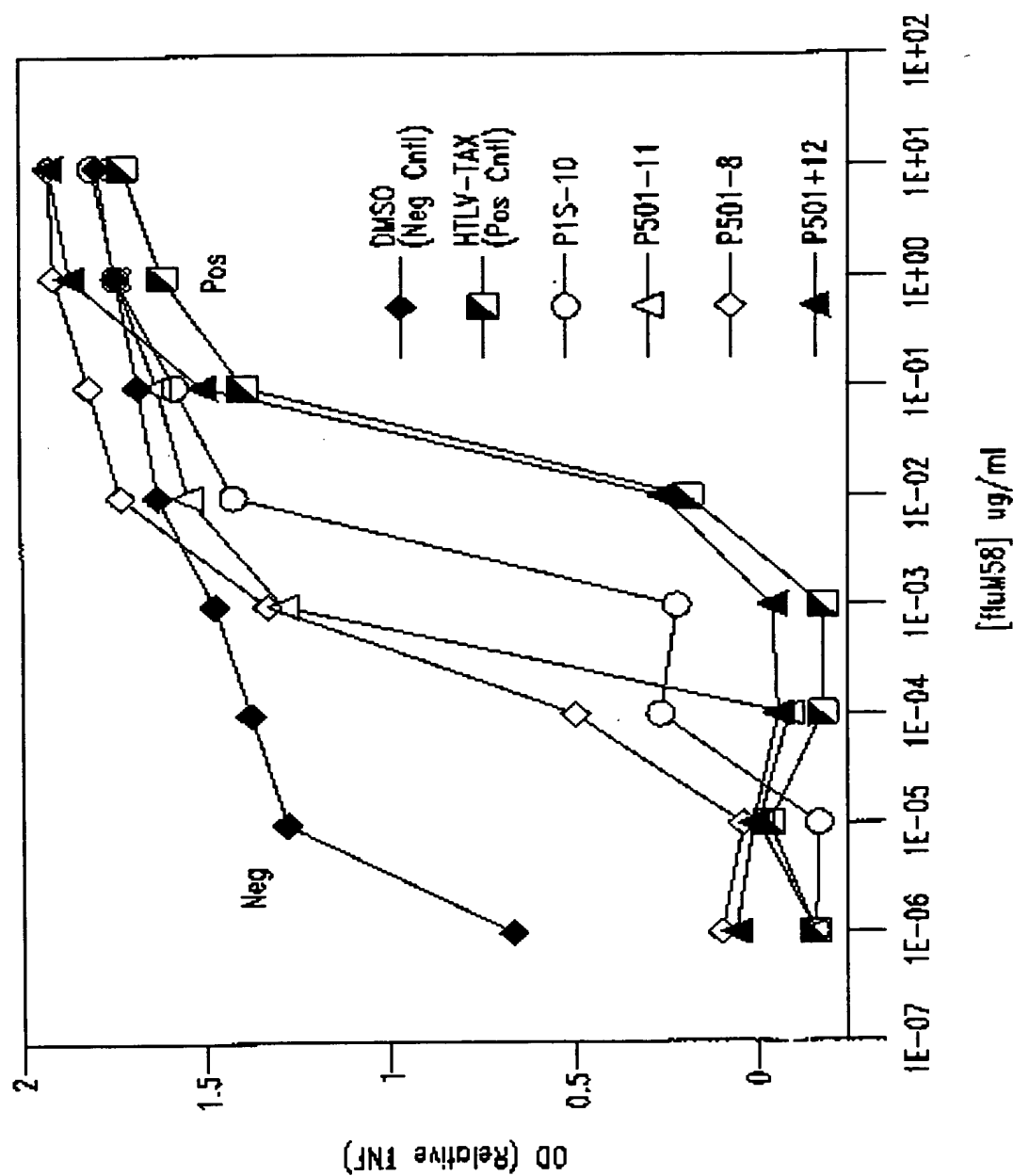


Fig. 3

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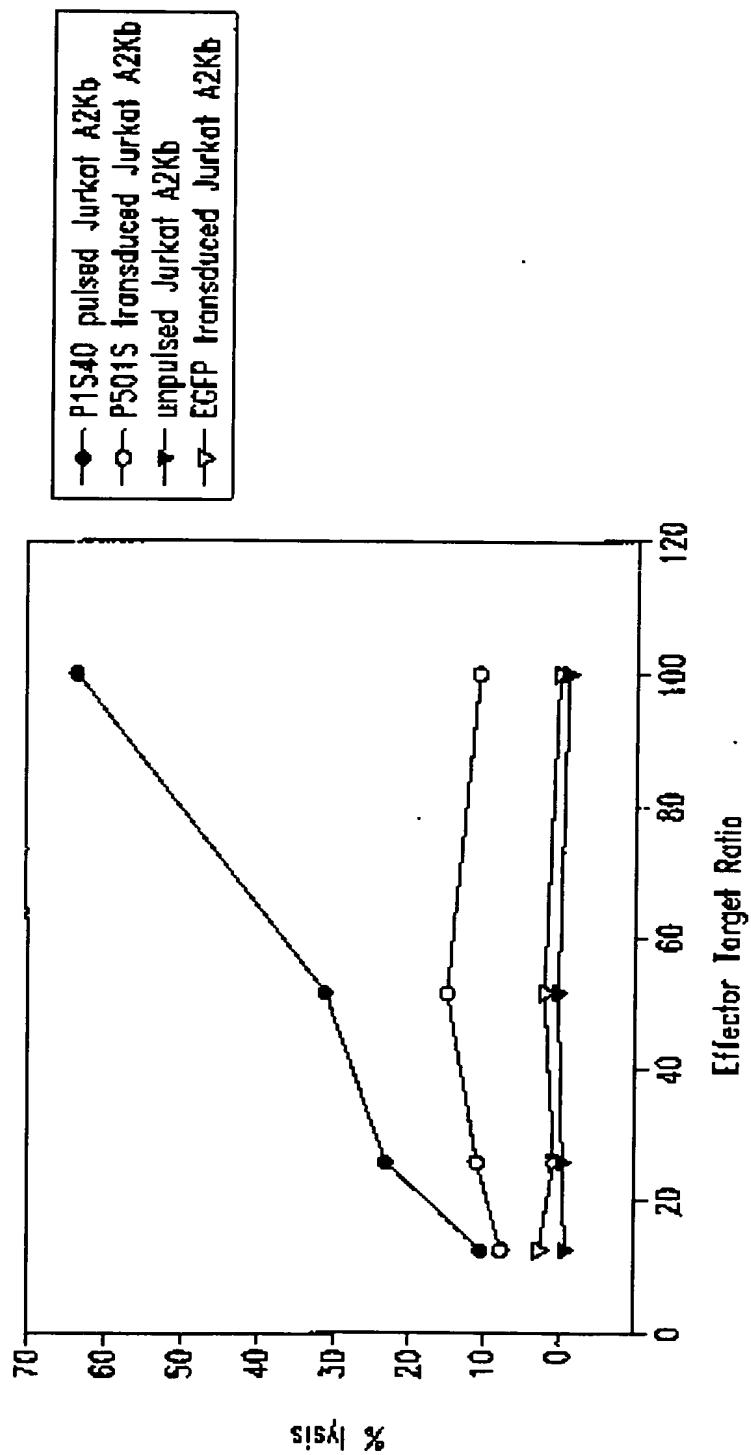


Fig. 4

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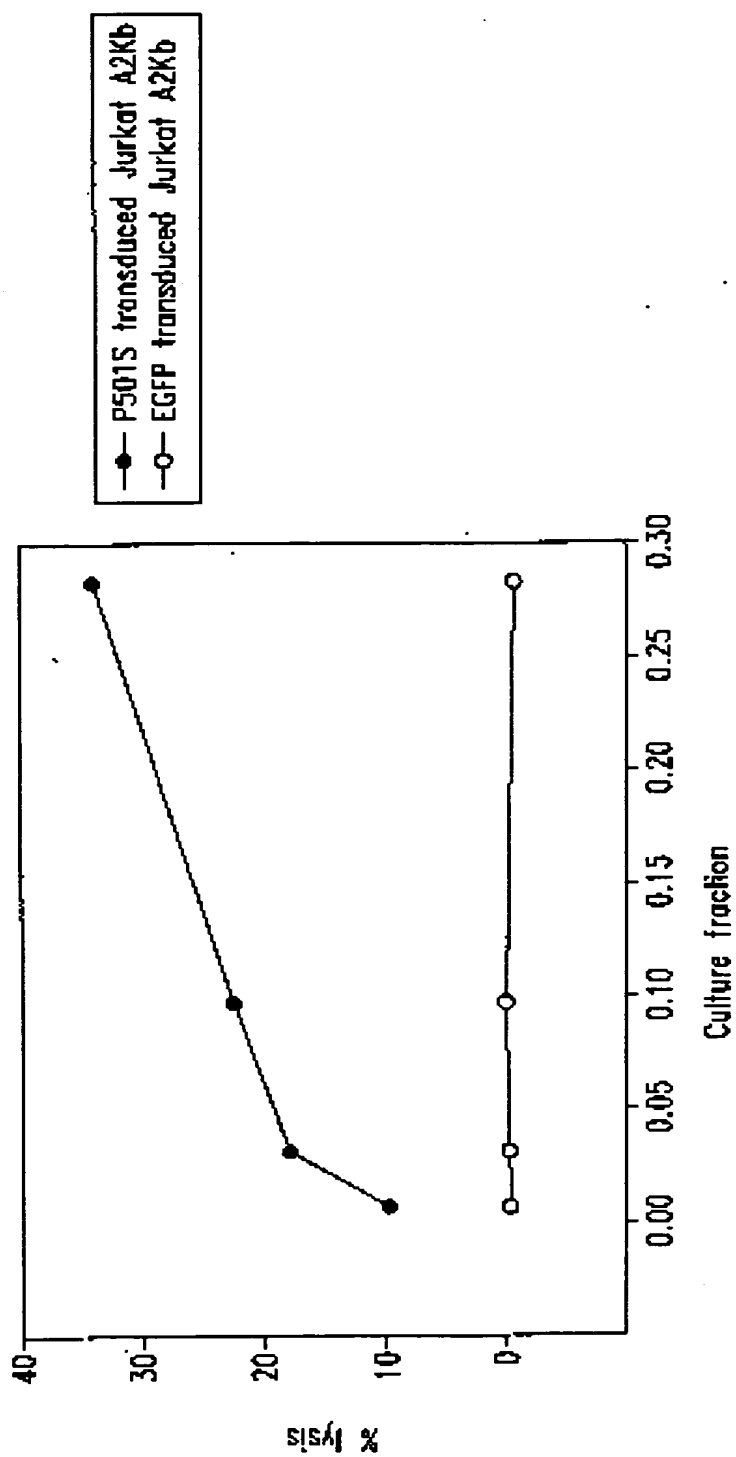
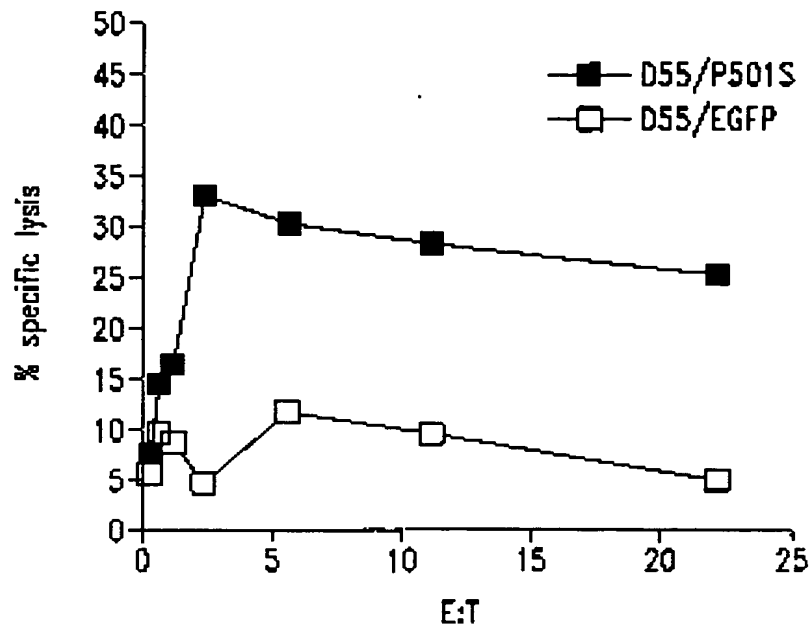
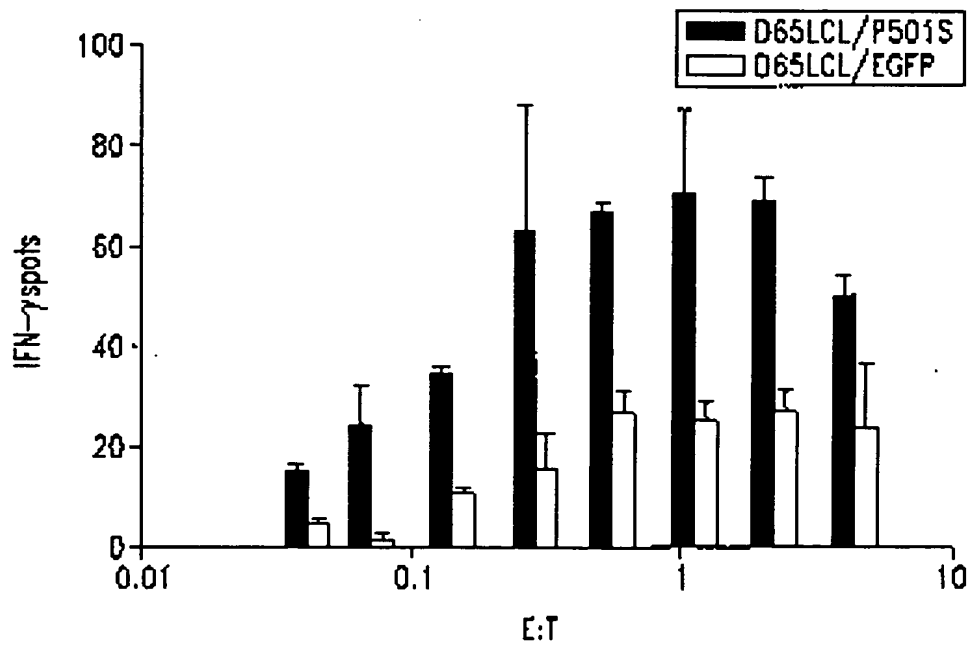


Fig. 5

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*Fig. 6A**Fig. 6B*

## SEQUENCE LISTING

<110> Corixa Corporation et al.

<120> COMPOSITIONS AND METHODS FOR THE THERAPY AND  
DIAGNOSIS OF PROSTATE CANCER

<130> 210121.534PC

<140> PCT

<141> 2000-10-04

<160> 476

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ccaggggggc	cagtcctctt	ctttacttca	tcccatccc	atgccaaagg	aagaccctcc	180
ctccttggtc	cacagccttc	totaggtctc	ccagtgcctc	caggacagag	tgggttatgt	240
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gcgcgtcttg	cgtaatcatg	gtcataactg	tttcctgtgt	gaaattgtta	tcgcctcaca	480
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anctaactca	cattaattgc	gttgcgctca	ctgnccgctt	tcagtcnng	aaaactgtcg	600
tgccagctgc	attaatgaat	cggccaacgc	ncggggaaaa	gcggtttgcg	ttttgggggc	660
tcttcgcctt	ctcgctcact	nantcctgcg	ctcggtcctt	cggctgcggg	gaacqgtatc	720
actcctcaaa	ggnggtatta	cgtttatccn	naaatcnngg	gatacccnng	aaaaaatctt	780
aacaaaaggg	cancuaaggg	cnguaacgta	aaaa			814

<210> 2

<211> 816

<212> DNA

<213> Homo sapien

<220>

<221> misc\_feature

<222> (1)...(816)

<223> n = A, T, C or G

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acagaaatgt	tggatgggtg	agcaaccttc	tatacgactt	acaggacagc	agatggggaa	60
ttcatggctg	ttggagcaat	agaaccccag	ttctacgagc	tgctgatcaa	aggacttgga	120
ctaaagtctg	atgaacttcc	caatcagatg	agcatggatg	attggccaga	aatgaagaag	180
aagtttgcag	atgtatttgc	aaagaagacg	aaggcagagt	ggtgtcaaat	ctttgacggc	240
acagatgctt	gtgtgactcc	ggttctgact	tttgaggagg	ttgttcacaa	tgatucacac	300
aaggaaacggg	gctcgittat	caccagttag	gagcaggacg	tgagcccccg	ccctacacct	360
ctgctgttaa	acaccccagc	catcccttct	ttcaaaaggg	atcaactagt	tctagagcgc	420
gcgcgccacg	cggctggagct	ccagcttttg	ttcccttttg	tgaqqullaa	ttgcgccttc	480

```

ggcgtaataca tgggtcatagc tgttttctgtg gtgaaattgt taccggtcca caattccccc 540
aacatacgag ccggaacata aagtgttaag cctgggggtgc ctaatgantg agctaacten 600
cattaattgc gttgcgctca ctgcccgtt tccagtcggg aacctgtcg tgcactgcn 660
ttantgaato ngccaccccc cgggaaaaag cgggttgctt ttgggctct tccgcttcc 720
tcgtcattg atcctngcnc cgggtcttcg gctgggngs acggttcaact cctcaaggc 780
ggtntnccgg ttatcccaa acnggggata cccngs 816

```

```

<210> 3
<211> 773
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(773)
<223> n = A,T,C or G

```

```

<400> 3
cttttgaag aaggatggc tggggtgtt aacagcagag gtgcaggggc ggggtcaog 60
tctgtctct cactggtgat aaacggguc cgttccttgt tgtgatcatg atgaacaacc 120
tctcaaaag tcagaaccgg agtcacacag gcattctgtgc cgtcaagat ttgacaccac 180
tctgctctcg tcttctttgc aaatcacctt gcaacttct tcttcatttc tggccaatca 240
tccatgctca tctgattggg aagttcatca gactttagtc canntccttt gatcagcagc 300
tcgtagaact ggggttctat tctccaac ccoetgactt ccccatctgc tgtcctgtaa 360
gttgtataga aaggtgctcc accatccaac atgttctgtc ctccaggggg ccccggtac 420
ccaattcgcc ctatantgag tctattacg cgcgtcact ggcgltcgt ttcaaacgtc 480
gtgactggga aaacctggg cgttaccac ttaatcgct tgcagccat cccctttcg 540
ccagctgggc gtaatanaga aaaggccgc accgatcgcc ctccaacag ttgcgcacct 600
gaatgggnaa atgggacccc cctgttacg cgcattnaac ccccgcnngg tttngttgtt 660
acccctacnt nnaacgctta cactttgca ggccttano gccgctccc tttcnccttt 720
cttcccttcc tttcncncn ctttccccg gggtttccc cttcaaaccc ona 773

```

```

<210> 4
<211> 828
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(828)
<223> n = A,T,C or G

```

```

<400> 4
cctcctgagt cctactgacc tgtgttttct ggtgtggagt ccagggtctgc taggaaaagg 60
aatgggcagg caccaggtgt tgcgaatgtt tctgaaatgg gtataatttc gtcctctcct 120
tcgggaacact ggtgtgtctt gaagacttct cgtcagttt cagtgaggac acacacaaag 180
acgtgggtga ccatgttgtt tgtgggtgac agagatggga ggggtggggc ccacctgga 240
agagtggaca gtgacacaa gtggacactc tctacagatc actgaggata agctggagcc 300
acaatgcatt aggtcacacac acagcaagga tgacnctgta aacatagccc acgtgtctct 360
gngggcactg ggaagcctan atnagycgt ggcanaaag aaggggagga tccactagtt 420
ctanagcggc cgcacccgc gtgganctcc ancttttgtt ccttttagtg agggttaatt 480
gcgcgcttg cntaactatg gtcatanctn tttcctgtgt gaaattgta tccgtcaca 540
attccacaca acatacganc cggaaacata aantgtaaac ctggggtgcc taatgantga 600
ctaactcaca ttaattgctg tgcgtcact gccgcttct caatcnggaa acctgtcttg 660
ccncttgcat tnatgaatc gccaaacccc ggggaaaagc gtttgcgttt tgggcgctct 720
tccgcttct cnetcantta ntccctnone tgggtcattc cggctgcnge aaaccggttc 780
accnctcca aagggggtat tccggtttcc ccaatccgg gganance 828

```

```

<210> 5
<211> 834
<212> DNA
<213> Homo sapien

```



<220>  
 <221> misc\_feature  
 <222> (1)...(834)  
 <223> n = A, T, C or G

<400> 5  
 ttttlttttt tttttactga tagatggaat ttattsaagct tttcacatgt gatagcacat 60  
 agtttttaatt gcatccaaag tactaacasa aactctagca atcaagaatg gcagcatgtt 120  
 attttataac aatcaacacc tgtggctttt aaaatttggg tttcataaga taattttatac 180  
 tgeagtaaat ctagccatgc ttttaaaaaa tgcttttaggt cactccaagc ttggcagtta 240  
 acattttggca taacaataa taaaacaatc acaatttaat aataacaaa tacaacattg 300  
 taggccataa tcatatacag tataaggaaa aggtggtagt gttgagtaag cagttattag 360  
 aatagaatac ctggcctct atgcaaatac gtctagacac tttgattcac tcagccotga 420  
 cattcagttt tcaaatagtag agacagggtc tacagtatca tttcacagtt tcaaacacat 480  
 tgaatacaag tagaaatga tgagttgatt tttatattat cattacatcc tcaagagtta 540  
 tcaccaaccc ctacagttata aaaaattttc aagtttatatt agtcatataa cttgggtgtgc 600  
 ttatttttaa ttagtgttaa atggattaag tgaaagacac aatgggtcccc taatgtgatt 660  
 gatattgggc atttttaoca gcttctaat cttaactttc aggcctttga actggaacat 720  
 tgnatnacag tgttccanag ttacaacctc ctggaacatt acagtgtgct tgattcaaaa 780  
 tgttattttg ttaaaaatta aattttaacc tggtygaaa ataatttgaa atna 834

<210> 6  
 <211> 818  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(818)  
 <223> n = A, T, C or G

<400> 6  
 tttttttttt tttttttttt aagacccotca tcaatagatg gagacatoca gaaatagtcn 60  
 aaccacatct acaaaatgcc agtatcaggg ggcggcttcn aagcuaaaql ualqlllqqa 120  
 tgttaugtga aatattagtt ggcggatgaa gcagatagtg aggaaggttg agcraataet 180  
 gacgtgaagt ccgtggaagc nlgggctac aaaaaalgl gggcgtaga tgcggtcggg 240  
 aatggtgaaq ggaagclcca agtactctga ggcttgtagg agggtaaaat agagaccag 300  
 laaaattgla aaagcagtg cttgaattat ttgggttctg ttgttttcta ttagactatg 360  
 gtgaagclca gtgattgata ctactgatgc gagtaatacg gatgtgttta ggagtgggac 420  
 ttctaggggg tttagcgggg tgatgcctgt tgggggccag tgccctocta gttggggggg 480  
 aggggttagg ctggagtggg aaaaggntca gaaaaatcct gcgaagaaaa aaacttctga 540  
 ggtaataaat aggtattacc cgtatcgaaq gccttttttg acaggtggtg tgtggtggcc 600  
 ttggtatgtg ctttctcgtg ttacatcgcg ccattcattg tatatggtta gtgtgttggg 660  
 ttantanggc ctancatgaa gaacttttgg antggaatta aatcaatngc ttggccggaa 720  
 gtcattanga nggctnaaaa ggcctgtta ngggtctggg ctnggtttta ccnaccat 780  
 ggaatncccc cccgggaana ntgnatccct attcttaa 818

<210> 7  
 <211> 817  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(817)  
 <223> n = A, T, C or G

<400> 7  
 ttttllllll tttttttttt tgggtctaga gggggtagag ggggtgctat agggtaata 60  
 cggggccctat ttcaagatt tttaggggaa ttaattctag gacgatgggt atgaaactgt 120  
 ggtttgctcc acagatttca gagcattgac cgtagtatac ccccggtcgt gtagcgggta 180

aagtgggtt	gttttagacgt	ccgggaattg	catctgtttt	taagccta	gtggggacag	240
ctcctgagtg	caagccgtcl	tgtgatgtaa	tcattatacn	aatgggggct	tcaatcggga	300
gtactactcg	attgtcaacg	tcaggagtc	gcaggtcgcc	tgtttctagg	aataatgggg	360
gaagtatgta	ggaaattgaa	attaatccgc	cgtagtcggg	gttctcctag	gttcattacc	420
attggtggcc	aattgatttg	atggtaaggg	gagggtccgt	tgaactcgtc	tgttatgtaa	480
aggatncctt	ngggatggga	aggcnatnae	ggactangga	tnaatggcgg	gcangtatat	540
tcaaacngtc	tctanttcct	gaacgtctg	aaatgttaat	aanaattaan	tttngttatt	600
gaatnttng	gaaaagggct	tacaggacta	gaaaccaa	angasaanta	atnnceangq	660
cnttatcntn	aaaggtatata	accnctccta	tnatccacc	caatngnatt	ccccacnchn	720
acnattggat	nccccanttc	caaaanggc	cncccccggg	tgnannccnc	cttttgttcc	780
cttnantgan	ggttattcnc	ccctngcntt	atcancc			817

&lt;210&gt; 8

&lt;211&gt; 799

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc feature

&lt;222&gt; (1) ... (799)

&lt;223&gt; n = A, T, C or G

&lt;400&gt; 8

catttcggg	tttactttct	agggaaggcc	gagcggaggc	tgcatacgtg	ggaaatcggtg	60
cataaggaga	actttctgct	ggcacgcgct	agggacaagg	gggagagcga	clccgagcgt	120
ctgaagcgca	cgtcccagaa	ggtygacttg	gcactgaaac	agctgggaca	catccgcgag	180
tacgaacagc	gcctgaaagt	gctggagcgg	gaggtccagc	agtgtagccg	cgtcctgggg	240
tgggtggccg	angcctganc	cgtctgect	tgctgcccc	angtgggccc	ccaccccctg	300
acctgcctgg	gtccaaacac	tgagccctgc	tggcggactt	caagganaac	ccccacangg	360
ggattttgct	cctanantaa	ggctcatctg	ggcctcggcc	ccccacactg	gttggccttg	420
tctttgaggt	gagccccatg	tccatctggg	ccactgtcng	gacacacttc	ngggagtggt	480
ctccttacaa	ccacannatg	cccggtcctt	cccggaaccc	antcccancc	tnggaaggat	540
caagnccctg	atccactnnt	ncctanaaccg	gcncncnccg	cngtggaaac	cnccttntgt	600
tccctttctt	tnagggttaa	tnnccgcttg	gccttnccan	ngtccctncc	nttttccnnt	660
gttnaaattg	ttanqcnccc	ncnntcccn	cnncnnccan	cccgaaccnn	annntnnann	720
ncctgggggt	ncnnncngat	tgaccenncc	ncctntant	tgcnttnggg	nnccntgccc	780
ctttccctct	ngggannccg					799

&lt;210&gt; 9

&lt;211&gt; 801

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc feature

&lt;222&gt; (1) ... (801)

&lt;223&gt; n = A, T, C or G

&lt;400&gt; 9

acgccttgat	cctcccaggg	tgggaactggt	tctgggagga	gccggggcatg	ctgtggtttg	60
taangatgac	actcccaaag	gtggtcctga	cagtggccua	gatggacatg	gggctcacc	120
caaggacaa	gccaaccggg	gctggggccg	aaqccacat	gatccttact	ctatgagcaa	180
aatccctgt	gggggcttct	ccttggaagtc	cggcancagg	gctcagtctt	tggacccang	240
caggtcatgg	ggttgtngnc	caactggggg	cncuaacgca	aaangggcca	gggctcngn	300
ccccatccc	angacggggc	tcaactnctg	gaactccccc	tcacacactt	tcatgcgctg	360
ttctaccng	cgnatntgtc	ccactgtttt	cngtgcenac	tcacacttct	nggaogtgog	420
ctecatccg	cgggantcnc	ntccccgett	tgtccccl; tc	cacgtaccan	caacuaattt	480
cnccntantg	caccnattcc	caenttttnc	agntttccnc	nncgngcttc	cttnlaaaag	540
ggttganecc	cggaaaatnc	cccaaagggg	ggggggcngg	tacccaaactn	ccccctnafa	600
gctgaantcc	ccatnacnnc	gnctcnatgg	ancntccnt	tttaannacn	ttctnaactt	660
gggaananc	ctcgnccntn	cccccnttaa	tccnccttg	cnangnncnt	cccccnntcc	720
ncccnntng	gcntntnann	cnaaaaaggc	ccnnnancaa	tctcctnncc	cctcanttcc	780

ccanccctog aatcgccn c

801

<210> 10  
 <211> 789  
 <212> DNA  
 <213> Homo sapien  
 <220>  
 <221> misc\_feature  
 <222> (1)...(789)  
 <223> n = A,T,C or G

<400> 10  
 cagtctatnt ggccagtgtg gcagctttcc ctgtggctgc cgggtgcaca tgcctgtccc 60  
 acagtgtggo cgtggtgaca gottcagccg ccttcaccgg gttaaccttc tcagccctgc 120  
 agatccctgc ctacacactg gctccctctf accaccggga gaagcaggtg ttcctgccc 180  
 aataccgagg ggacactgga ggtgctagca gtgaggacag cctgatgacc agcttctgc 240  
 caggccctaa gcttggagct cctttuuta atggacacgt gggkqclgga ggcagtggcc 300  
 tgctccacc tccaccggc ctctgcgggg cctctgctg tgatgtctcc gtacgtgtgg 360  
 tgggtgggtg gccaccgan gccaggggtg ttccggggcc gggcatctgc ctggacctgc 420  
 ccctccctga tagtctctcc tgcctgccc nqkqggccc tccctgttta tgggtctcc 480  
 tgctccagtc agccagtctg tccctgccc tatggtgtct gccgcaggcc tgggtctggt 540  
 ccctttact ttctacacc ggtantatt gacaaagacg anttggccaa atactcagcg 600  
 tlaaaaaall ccagcaacct tgggggtgga aggcctgccc cactgggtcc aactccccc 660  
 tctgttaac cccatggggc tgcgggcttg gccgccaatt tctgttgcg ccaantnat 720  
 gtggctctct gctgccacct gttgtggct gaagtgcata cngcncantc nggggggtng 780  
 gnggttccc 789

<210> 11  
 <211> 772  
 <212> DNA  
 <213> Homo sapien  
 <220>  
 <221> misc\_feature  
 <222> (1)...(772)  
 <223> n = A,T,C or G

<400> 11  
 cccaccctac ccaaatatta gacaccaaca cagaaaagct agcaatggat tccctctctac 60  
 ttgtttaa aaataagtta aatattttaa tgcctgtgtc tctgtgatg caacagaagg 120  
 accaacaggc cacatccctg taaaaggtaa gaggggggtg gatcagcaaa aagacagtgc 180  
 tgtgggctga ggggacctgg ttcttgtgtg ttgcccctca ggaactctcc cctacaaata 240  
 actttcatat gtccaatcc catggaggag tgtttcatcc tagaaactcc catgcaggag 300  
 ctacattaaa cgaagctgca ggttaagggg ottanagatg ggaaccagg tgcctgagtt 360  
 tattcagctc ccaaaaaacc ttctctaggt gtgtctcaac taggagquta gctgttaacc 420  
 ctgagcctgg gtaatccacc tgcagagctc ccgattcca qtgcctgga ccttcttggc 480  
 ctccctgtat aagtccagac tgaaccctcc ttggaaggnc tccaglcagg cagccctana 540  
 aactggggaa aaaaagaaa gacggcccan ccccccagctg tgcantcag cacctcaaca 600  
 gcacagggtg gcagcaaaa aaccccttta ctttggcaca aacaaaaact ngggggggca 660  
 accccggcac ccnangggg qlaacagga ancggggnea cntggaaacc aattnaggca 720  
 ggcuncncu cucnaatntt gctggggaat ttllcctccc cttaaattntt tc 772

<210> 12  
 <211> 751  
 <212> DNA  
 <213> Homo sapien  
 <220>  
 <221> misc\_f ature  
 <222> (1)...(751)  
 <223> n = A,T,C or G

```

<400> 12
gcccccaattc cagctgccac accaccccacg gtgactgcat tagttcggat gtcatacaaa      60
agctgattga agcaaccctc tacttttttg tctgtagcct ttfgcttggt gcagggtttca      120
ttggtgtgtg ttggtgacgtt gtcattgcaa cagaatgggg gaaaggcaact gttctctttg      180
aaglonqqlg agtctcctcaa atccgtatag ttggtgaagc cacagcaactt gagccctttc      240
atggtggtgt tccacacttg agtgaagtct tcttggggac cataatcttt ctfgatggca      300
ggcclaccca gcaagctcag ggaagtgtc agccattgtg gtgtacacca aggcgaccac      360
agcagctgcn cctcagcaa tgaagatgan gaggunatg aagaagaacg tcnogagggc      420
acatttgctc tcagtcttan caccatanca gccctgaaa accaananca aagaccacna      480
cnrcggctgc gatgaagaaa tnaccccncg ttgacaaact tgcattggcac tggganccac      540
agtggccena aaatctttca aaaaggatgc cccctcnatt gaccccccaa atgcccavtg      600
ccaacagggg ctgccccach cncnnaacga tgancnatt gnaaagatc tcnlqqict      660
tnatnaacnt gaacctgcn tngtggctcc tgttcaggnc cngggcclga cttctnaarn      720
aangaactcn gaagncceca cngganannc g                                     751

```

<210> 13

<211> 729

<212> DNA

<213> Homo sapien

<220>

<221> misc\_feature

<222> {1}... (729)

<223> n = A,T,C or G

```

<400> 13
gagccnqqcg tccctctgco tgcccactca gtggcaacac ccgggagctg ttttgtcctt      60
tgtgganctc cagcagtncc ctctttcaga actcantgoc aagenccttg aacaggagoc      120
accatgcagl gcttcagctt cattaagacc atgatgatcc atgatgatcc gctctctttc      180
ctgtgtggtg cagccctgtt ggcagtgggc atctgggtgt caatcgatgg ggcattcttt      240
ctgaagatct tcggggcact gtcgtccagt gccatgcagt ttgtcaacgt gggctacttc      300
ctcatcgacg ccggcggttg ggtcttagct ctagggttcc tgggctgcta tgggtgctaag      360
actgagagca agtgtgccct ogtgacgttc ttcttcaccc tccctcctcat ctctcattgt      420
gaggttgcaa tgctgtggtc gccttggtgt acaccacaat ggctgagcac ttctgacgt      480
tgctggtaat gcctgccatc aanaaaagat tatgggttcc caggaaactc tcaactcaagt      540
gttggaacac caccatgaaa gggctcaagt gctgtggctt cnnccaacta tacggatttt      600
aaagantcac ctacttcaaa gaaaanagtg cctttccccc atttctgttg caattgacaa      660
acgtccccaa cccagccaat tgaaaacctg caccacaacc aaangggctc ccaaccanaa      720
allnaaggg                                     729

```

<210> 14

<211> 816

<212> DNA

<213> Homo sapien

<220>

<221> misc\_feature

<222> {1}... (816)

<223> n = A,T,C or G

```

<400> 14
tgtctcttct caaagttggt cttgttgcoa taacaaccac cataggtaaa gcgggcgag      60
tgttcgtcga aggggttgta gtaccagcgc gggatgctct ccttgacagag tctctgtctc      120
ggcaggtcca cgcagtgcgc tttgtcactg gggaaatgga tgcgctggag ctctcctcag      180
ccactcgtgt attttcaca ggcagcctcg tccgacgcgt ccgggcagtt ggggtgtctc      240
tcacactcca ggaactgtc natgcagcag ccattgctgc agcgggaactg ggtgggtga      300
canqtgcccag agcacactgg atgggcctt tccatgnnan ggccctgng ggaagtccc      360
tgancccc n anctgcctct caaangccc accttgacaa ccccgacagg ctagaatgga      420
atcttcttcc cgaaggttag tnttcttgt tgcccaance ancccnataa acaactctt      480
gcanaletgc tccgnggggg tcntantacc ancgtaggaa aaqaaaccca agcnyugaac      540
caancttqll: tggatnugaa gcnataatct notnttctgc ctggtaggac gcaccanlna      600

```

ctgtnnanct	ttagnccontg	gtcctcntgg	gttgnncttg	aacctaatcn	ccnntcaact	660
gggacaagg	aantngccnt	cctttnaatt	ccnancntn	ccccctggt	tggggctttt	720
cncnctcta	ccccagaaan	ncogtgttcc	cccccaacta	ggggccnaaa	ccnnttnttc	780
cacacccctn	ccccccccc	gggttcngnt	ggttng			816

<210> 15  
 <211> 783  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc feature  
 <222> (1)... (783)  
 <223> n = A, T, C or G

<400> 15						
ccaaggcctg	ggcaggcata	naattgaagg	tacaacccca	ggaacccctg	gtgctgaagg	60
atgtggaaaa	cacagalltg	cgccctactgc	ggggtgacac	ggatgtcagg	gtagagagga	120
aagacccnaa	ccaggtgqaa	clqlggggac	tcaagggaang	cacctacctg	ttccagctga	180
cagtgaactag	ctcagaccac	ccagaggaca	cgcccaacgt	cacagtcact	gtgctgtcca	240
ccaggcagac	agaagactac	tgccctcgcat	ccaacaangt	gggtcgtgc	cggggtcttt	300
tcacacgctg	gtactatgac	cccacggagc	agatctgcaa	gagtttctgt	tatggaggct	360
gcttgggcaa	caagaacaac	taccttcggg	aagaagagt	cattctance	tgtcnggggtg	420
tgcaagggtg	gcctttgana	ngcanctctg	gggtccangc	gactttcccc	cagggtccct	480
ccatggaaa	gcgcctatcca	ntgttctctg	gcacctgtca	gcccacccag	tlccagclgaa	540
ncaatggctg	ctgcactnac	antttcctng	aattgtgaca	acacccccca	ntgcccccaa	600
ccctcccaac	aaagcttccc	tgtnnaaaaa	tacnccantt	ggctttlnac	aaacncccg	660
cncctccttt	ttcccnntn	aacaaagggc	ncnngccttt	gaactgcccn	aaccnnggaa	720
tcnccnngg	aaaaantncc	ccccctggt	cctnnaance	cctccncaa	antncccccc	780
ccc						783

<210> 16  
 <211> 801  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc feature  
 <222> (1)... (801)  
 <223> n = A, T, C or G

<400> 16						
gccccaatc	cagctgccac	accacccacg	gtgactgcct	taqltcggat	gtcatacaaa	60
agctgattga	agcaaccctc	tacttttttg	tcgtgaagcc	tttgcttggt	gcaggtttca	120
ttggctgtgt	tggtgacgtt	gtcattgcaa	cagaatgggg	gaaaggcact	gttctctttg	180
aagttaggtg	agtcctcaaa	atccgtataq	tlgggtgaagc	cacagcactt	gagcccttcc	240
atggtggtgt	tcacacactt	aglgaggtct	tcctgggaac	cataatcttt	cttgatggca	300
ggcactacca	gcaacgtccg	gaagtgclca	gccattgttg	tgtacaccaa	ggcgaccaca	360
gcagctgcaa	cctcagcaat	gaagtgaggg	aggaggatga	agaagaacgt	cncgagggca	420
caettgctct	uugtcttagc	accctagcag	ccrangaaac	caagagcaaa	gaccacaaag	480
ccngctgcga	atgaagagaa	ntacccacgt	tgacaaaactg	catggccact	ggaogacagt	540
tygcccqaan	atcttcagaa	aagggaatgc	ccatcgattg	aacacccana	tgcccactgc	600
cnacagggtt	gencnncn	gaaagaatga	gccattgaag	aaggatcntc	ntggctctaa	660
tyaactqaa	gcntgcctgg	tgcccctgt	tcagggtctc	tggcagtgaa	ttctganaaa	720
aaqqaaangc	ntnagcccc	ccaaangana	aaacaccccc	gggtgttgcc	ctgaattggc	780
gyccaaqqaan	cactgccccn	g				801

<210> 17  
 <211> 740  
 <212> DNA  
 <213> Homo sapi n

<220>  
 <221> misc feature  
 <222> (1)...(740)  
 <223> n = A,T,C or G

<400> 17  
 gtgagugcca ggcgtccctc tgcctgccc ctcagtggca acacccggga gctgttttgt 60  
 cctttgtgga gccctcagag ttccctcttt uagaactcac tgccaagagc cctgaacagg 120  
 agccaccatg cagtgtctca gcllcallaa gacctgatg atcctcttca atttgclcat 180  
 ctllctgtgt gqbgcagccc tgttggcagt gggcatctgg gtgccaatcg atggggcctc 240  
 ctttctgaag atcttcgggc cctgtcgtc cagtgccatg cagtttgtca acgtgggcta 300  
 ctloctcctc gcagccqagc ttgttggtct tgccttggt ttccctgggt gctatggtag 360  
 taagacggag agcagtggt cctcctgtag gttctctctc atcctcctcc tcactcllcat 420  
 tgcgaaggt gcagctgctg tggctgcctt ggtgtacacc acaatggctg aaccattcct 480  
 gacgttgctg gtantgctg ccatcaanaa agattatggg tcccaggaa aaattcactc 540  
 aantntggaa caccnccatg aaaagggctc caatttctgn tggcttcccc aactatcccg 600  
 gaattttgaa agantcnccc tacttccaaa aaaaaanant tgccttttnc cccnttctgt 660  
 tgcaatgaaa acntcccaan acngccaatn aaaacotgcc cnnncaaaaa gntcncaaa 720  
 caaaaaant nnaagggttn 740

<210> 18  
 <211> 802  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc feature  
 <222> (1)...(802)  
 <223> n = A,T,C or G

<400> 18  
 ccgctgggtt cgctgggtcca gngnagccac gaagcacgtc agcatacaca gctcfaatca 60  
 caaggtcttc cagctgccgc acattacgca gggcaagagc ctccagcaac actgcataatg 120  
 ggatacaott tacttttagca gccagggtga caactgagag gtgtogaagc ttattcttct 180  
 gacctctgt tagtggagga agattccggg cttcagctaa gtatgcagcg tatgtcccat 240  
 aagcaaacac tgtgagcagc cggaggttag aggcacaagtc actctcagcc agctctctaa 300  
 cattgggcct gtccagcagt tctccaaaca cgtagacacc agnggootcc agcacctgat 360  
 ggatgagtgt ggcacgcgt gccucccttg ccgacttggc taggagcaga aattgctcct 420  
 ggttctgccc tgtcaacttc acttcogcac tcatcactgc actgagtgtg ggggacttgg 480  
 gctcaggatg tccagagacg tggttccguc ccttuncetta atgacacccn ccanncaacc 540  
 gtcggtctcc gccgattgng ttctgtoginc clgggclcagg gtctgttggc cttactcltg 600  
 aanellogtc nggoccatgg aatlcacnnc accggaacln gtanqatcca ctnnkctat 660  
 aaccgqncgc caccgcnnt ggaaactcac tcltntlncc tttacttgag ggttaagggc 720  
 accctttnng ttaccttggt ccaaaccntn cntgtgtgag anatinglnaa tcnngnccna 780  
 tnccancnnc atangaagcc ng 802

<210> 19  
 <211> 731  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc feature  
 <222> (1)...(731)  
 <223> n = A,T,C or G

<400> 19  
 cnaagcttcc aggtnacggy ccgcauance tgaccunagg tancanaang cagmuncggg 60  
 gagccuacog tcaugnggnq gnqtctttat nqgagggggc ggaqccacat cncrtgaent 120  
 cntgacccca acfccccccc ncnanlqua gtgatgagt cagaactgaa ggtnacgtgg 180  
 caggaaucaa gancasannc tgcctcnnntc caaglcggcn naggagggcg ggclggccac 240  
 gencateent cnegtgtgtn aaagccccnn cctgtctact tgtttggaga acngcnnnng 300

catgccagc	gttanatcac	nggcngcgag	tnantttgcc	tctcccttcc	ggctgcgcac	360
cnggtntgct	tagnggacat	aacctgacta	cttaactgaa	cccnngaato	tnccnccct	420
ccactaagct	cagsacaaaa	saacttgaca	ccactcantt	gtcacctgnc	tgotcaagta	480
aagtgtaccc	catncccaat	gtntgctnga	ngctctgncc	tgcnttangt	tgggtcctgg	540
gaagacctat	caattnaagc	tatgtttctg	actgcctctt	gtcccttgna	acaancnacc	600
cnnctntcca	aggggggggc	ggcccccaat	ccccccaacc	ntnaattnan	tttancnccn	660
cccccmggcc	cgccctttta	cnancntcnn	nnacngggna	aaaccnnngc	tttncccaac	720
nnaatccncc	t					731

<210> 20  
 <211> 754  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc feature  
 <222> (1) . . . (754)  
 <223> n = A, T, C or G

<400> 20						
tttttttttt	tttttttttt	taaaaacccc	ctccattnaa	lgnaaacttc	cgaatttgct	60
caaccccttc	ntccaaatnn	ccntttccgg	gnngggggttc	caaaccnaan	ttanttttgg	120
annttaatt	aatnttntt	tggnggnnna	anccnaatgt	nangaaagtt	naaccanta	180
tnanttttaa	tnccctggaa	ccngtngntt	ccaaaaatnt	ttaaccetta	antccctccg	240
aaatngttta	nggaaaaacc	aantttctnt	aaggttggtt	gaaggntnaa	tnaaaaaccc	300
nnccaattgt	tttngccac	gcctgaatta	attggtttcc	gntgttttcc	nttaaaanaa	360
ggnnancccc	ggttantnaa	tcccccnnc	cccaattata	ccganitttt	ttngaattgg	420
gancccnogg	gaattaacgg	ggnnnttccc	tnttgggggg	cnggnncccc	ccccntcggg	480
ggttngggnc	aggnccnaat	tgtttaaggg	tccgaaaaat	ccctccnaga	aaaaaanctc	540
ccaggttgag	nttnggggtt	ncccccccc	cangggccct	ctognanagt	tgggttttgg	600
ggggccctgg	attttttttc	ccctntttnc	tccccccccc	ccnqganaq	aggttngngt	660
tttgnctnnc	gycccccncn	aaganctttt	ccganntnan	ttaaatccnt	gcctnggcga	720
agtccnttqn	agggntaann	ggccccclnn	cggg			754

<210> 21  
 <211> 755  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc feature  
 <222> (1) . . . (755)  
 <223> n = A, T, C or G

<400> 21						
atcancccat	gacccnnaac	nngggacccc	tcancgggnc	nnncnaccnc	cgcccnatca	60
nngttaggncc	actncnnttn	natacncccc	cnccnactac	gcccncnanc	cnacgcnccta	120
nnccanctncc	actganngcg	cgangtngan	ngagaaanct	nalccanag	ncaccanacn	180
ccagctgtcc	nanaangcot	nnnatacngg	nnnateccat	ntgnanccctc	cnaagttatn	240
nnccnccanct	gattttcccln	anccgcttcc	ccntnccccc	lanccctccc	cccccaacna	300
cgaaggcnct	ggncnnaagg	nnccgnccnc	ccgctaghtc	cccnncnagt	cncncncccta	360
aactcancnc	nal.lacncc	tlcol.gagta	ccactccccg	aatctcaccc	tactcaactc	420
aaacaaatcn	gatccaaaat	aatncaagcc	tgnttatnac	actntgactg	ggtctctatt	480
ttagnggtcc	ntnaancntc	ctaatacttc	cagtctnccct	tcnccaattt	ccnaanggct	540
cttctcngaca	gcantttttg	gtcccnnttt	gggttcttan	ngaattgccc	ttcntngaac	600
gggctcntct	tttcccttgg	ttanccctgg	ttcncccgcc	cagttattat	ttcccntttt	660
aaattctntc	cntttanttt	tggcnttcna	aacccccgcc	cttgaaaaag	gccccctggt	720
aaaaggttgt	tttganaaaa	tttttgcttt	gtcc			755

<210> 22  
 <211> 849  
 <212> DNA

<213> Homo sapien

<220>

<221> misc\_feature

<222> (1)...(849)

<223> n = A,T,C or G

<400> 22

tttttttttt	tttttangtg	tngtcgtgca	ggtagaggct	tactacaant	gtgaanacgt	60
acgctnggan	taangeagacc	cgantttctag	ganncnccct	aaaatcanac	tgtgaagatn	120
atcctgnnna	cggaanggtc	accggnggat	nntgctaggg	tgnccnctcc	cannncnttn	180
cataacteng	nggccctgcc	caccaccttc	ggcgcccong	ngnccgggcc	egggtcattn	240
gnnttaacnn	cactnnngcna	ncgggttccn	nccccnnng	acccngggcg	tccggggtnc	300
tctgtcttcc	cctgnagncn	anaaantggg	ccnccggccc	ctttaccctt	nnacaagcca	360
engccnteta	ncnccngccc	ccctccant	nnnggggact	gccnanngt	ccgttncctng	420
nnacucennn	gggtncctcg	gttgctogant	cnaccgnang	ccanggatc	cnaaggaaag	480
tgcgltnttg	gccccatccc	tctcctncgg	nnccaccttc	ccgaacnanga	nccgctcccg	540
cncnngnnng	cctcncctcg	caacacccgc	ctctctcngt	nuggnnnccu	ccccaccgc	600
ncctcncnc	ngnccgnancn	ctcncncnc	gtctcannca	ccacccccgc	ccgcacagcc	660
ntcancacnn	ggnnagacnn	nagcncnttc	gcncgcgcgc	gcgnccccct	cgcncncgaa	720
ctnctcnggg	ccantnncgc	tcaancnna	cnaaacgcgc	ctgcgcgcgc	cgnagccncc	780
ncctcncnca	gtcctcccg	ctccnacc	angnttccn	cgaggacacn	nnaccccgcc	840
nnccngcgg						849

<210> 23

<211> 872

<212> DNA

<213> Homo sapien

<220>

<221> misc\_feature

<222> (1)...(872)

<223> n = A,T,C or G

<400> 23

gcgcasaacta	tacttegttc	gnactcgtgc	gcctcgtcnc	tcttttcttc	cgcacccatg	60
tctgacnanc	ccgattnggc	ngatctchcn	aagntcganc	agtccaaact	gantaacaca	120
cacacnncan	aganaaatcc	nctgccttcc	anagtanacn	attgaacnng	agaaccangc	180
nggcgaactcg	taatnaggcg	tgcgcgcgca	atntgtcncc	gtttattntn	ccagctcnc	240
ctnccnaecc	taactcttcn	nagctgtcnn	acccctngtn	cgnacccccc	naggctcgga	300
tccgggttttn	nttgaccgng	cnnccctcc	ccccntccat	nacganccnc	ccgcacccacc	360
nanngcncgc	nccecgnnct	cttcgcncnc	ctgtcctntn	ccccgtngc	ctggcncngn	420
accgcattga	ccctcgcenn	ctnccnngaaa	ncgnanacgt	ccgggttggn	annancgctg	480
tgggnnngcg	tctgcncgcg	gttccctccn	nccncttcca	ccatcttcnt	taonggggtct	540
ccnccgcctc	tccnncaenc	cctgggagcg	tntcctntgc	cccccttnac	tccccccctt	600
cgnccgtgnc	cgncccccacc	ntcatttnc	nacgntcttc	acaaannccct	ggntnnctcc	660
cnancnngcn	gtcancncag	ggaaggagng	ggnnccnntg	nttgacgctg	ngguyangtc	720
cgaanantcc	tccnctccan	cncctccctt	ccggcggnct	ctcngttncc	aacctlancaa	780
ntctccccc	ngnccncttc	tccagcclnc	ccncccccnc	ctctgacntg	tactctgctc	840
tnaccnnlac	ganltatcg	cncctctttt	cc			872

<210> 24

<211> 815

<212> DNA

<213> Homo sapien

<220>

<221> misc\_feature

<222> (1)...(815)

<223> n = A,T,C or G

<400> 24



gcctgcaagc	ttgaglatte	tatagngtca	cctaaatanc	ttggcntaat	catgggtcnta	60
nctgncttcc	tgtgtcaaat	gtatacnaaa	tanatatgaa	tcfnatntga	caagannnla	120
tctnccatla	gtcccaantq	tnntgtccat	cctgtcngan	canatlccca	tnnattncgn	180
cgccttencn	gncantaln	taatngggaa	ntcnntnnn	ncacennccat	ctatcntncc	240
gcncctgac	lggnagagat	ggatnnttc	lnntntgacc	ncatgttca	tcttggatln	300
aanancccc	cggngnccac	cggttngnng	cnagccnntc	ccaagacctc	ctgtggaggt	360
aacctgcgtc	agannccatc	aaontgggaa	acccgcnncc	angtnnaagt	ngnnncanen	420
gaccccgtec	aggnttnacc	atcccttcnc	agcccccctt	tnngtgccct	anagngnagc	480
gtgtccnanc	cncctcacat	ganacgcgcc	agncanccg	caattnggca	caatgtcgnc	540
gaacccctta	ggggggnnta	tncaaanccc	caggattgtc	cnmcangaa	atcccccanc	600
ccnccctac	cennctttgg	gacngtgacc	aantcccggg	gtncaggtcc	ggccngnctc	660
ccccacoggt	nnccntgggg	gggtgaanct	cnngntcanc	cnngcgaggn	ntcnaagga	720
accggnccctn	ggncgaanng	ancnntcnga	agngccnctt	cgtataaccc	ccctcncca	780
nccnancgnt	agntccccc	cngggtncgg	aangg			815

&lt;210&gt; 25

&lt;211&gt; 775

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc feature

&lt;222&gt; (1)...(775)

&lt;223&gt; n = A, T, C or G

&lt;400&gt; 25

ccgagatgtc	tgcgtccgtg	gccttccgtg	tgcgtccgtc	acacacacac	tctggcctgg	60
aggctatcca	gcgtacacca	aagattccag	tttactcacg	tcatccagca	gagaatggaa	120
agtcaaatit	cctgaattgc	tatgtgtctg	ggtttccatc	atccgacatt	gaanttgact	180
tactgaagaa	tgganagaga	attgaaaaag	tggagcattc	agacttgtct	ttcagcaagg	240
actgtctctt	ctatctcttg	tactacactg	aattcacccc	cactgaaaaa	gatgagtatg	300
cctgccgtgt	gaaccatgtg	actttgtcac	agcccaagat	agttaagtgg	gacgagaca	360
tgtaagcagn	cnnccatggaa	gtttgaagat	gcgcgatttg	gattggatga	attcccaatt	420
ctgcttgcct	gcnttttaat	antgatatgc	ntatacaccc	taccctttat	gncccccnaa	480
tgtagggggt	acatnangtt	tcnctnngga	catgatcttc	ctttataant	ccnccnttcg	540
aattgcccg	cncccngttt	ngaattgttc	cnaaccacg	gttggctccc	ccaggtcncc	600
tcttccggaa	ggccctgggc	cnctttncaa	gggtgggggg	acnnaaaatt	tcncttctgc	660
ccncccncca	cnctcttgng	nnccnctttt	gggaacccct	cnattccctt	tggcctcnna	720
nccttnctla	ancccaactn	ccnccnglnc	naaannlttn	actlccnccc	tcacc	775

&lt;210&gt; 26

&lt;211&gt; 820

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc feature

&lt;222&gt; (1)...(820)

&lt;223&gt; n = A, T, C or G

&lt;400&gt; 26

anattantac	agtgtaatct	tttcccagag	gtgtgtanag	ggaaacgggg	ctagaggual	60
ccanagata	ncctatanca	acagtgcctt	gaccaagagc	tgttgggcac	atttccclqa	120
gaaaagggtg	cgttccccat	cactctctct	ctcccatagc	catcccagag	gggtgagtag	180
ccatcangcc	ttcgggtggg	gggagtcang	gaacacaacn	acccagagag	anacagaccc	240
ntgatgacca	tgggcggggg	cgaqccctct	ccctgnaccg	gggttggcna	nganagccta	300
ncgtaggggt	cacactatac	acgttaccga	ccnagalnan	caacctcttc	aagtgcaccc	360
ttcctacctg	acnaaccagc	acnnnaaccl	gcngcctggg	gacagcncct	ggancagcta	420
acnnagccat	ccclgcctcc	cccatggcng	tnccntcccc	tggctcclng	aagggaagct	480
ccctgttggg	attncggggg	naccaaggga	ccccccctct	ccanctgtga	aggaasaann	540
gatggcaclt	lnccttcccg	gccnntcccc	tcttccctta	caagccccc	ntactcctc	600
Lcctctctnt	ntcctgncnc	acttttnacc	ccnnnatttc	ccttnattga	tggannctn	660

ganattccac tnngeectnc ontenateng naanacnaaa naetntctna ccnggggat 720  
 gggnncecteg nteatectet ctttttncel acenecntt ctttgectet cctingatec  
 780tccaaacnte gntggcentn ccccccnnn tcecttneec  
 820

<210> 27  
 <211> 818  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)... (818)  
 <223> n = A,T,C or G

<400> 27  
 tctgggtgat ggcctottee tectcaggga cctctgactg ctctgggcca aagaatctct 60  
 tgtttcttct ccgagoccca ggcagcgtg attcagccct gcccaacctg attctgatga 120  
 ctggggatgc tgtgacggac ccaaggggca aatagggtcc cagggtccag ggaggggcgc 180  
 ctgctgagca cttccggccc tcacctgoc cagccccctgc catgagctct gggctgggtc 240  
 tcggcctcca gggttctgct ctccangca ngccancaag tggcgtggg ccacactggc 300  
 ttcttctgc ccntccctg gctctgante totgtcttc tgtcctgtgc angenccttg 360  
 gatctcagtt tccctcctc anngaaactet gttctgann tottcantta actntgantt 420  
 tatnaccnen tggctgtnc tgtcnnaett teatgggcon gaccggctaa tccctccctc 480  
 nctcccttcc anttonnnaa acngcctnc ontcntctcc ccntancccg ccnggggaac 540  
 ctcccttgcc ctncaccang gconnnaccg cccnlnnctn ggggggcnng gtnnctnnc 600  
 ctgntnnecc cncctcnncn tccctcgctc cncnncgcn ungcaanttc nongtcccn 660  
 tnnctcttcn ngntctgnaa ngntcnctn tnnnnngnch ngntnlnen tccctctenc 720  
 cnnnlgnaag lanttnanne ncngnccccc nnnnccnnnn nggnantnch tctnncngc 780  
 ccnnccccc ngnatteagg cctccnntct ccggccnc 818

<210> 28  
 <211> 731  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)... (731)  
 <223> n = A,T,C or G

<400> 28  
 aggaagggcg gagggatatt gtangggatt gagggatagg agnetaangg gggaggtgtg 60  
 tcccaacatg anggtgnngt tctcttttga angaggggtg ngtttttann ccnggtgggt 120  
 gattnaarcc cattgtatgg agnnaaaggn tttnagggat ttctggctc ttatcagtat 180  
 ntanattcct gtnaatcgga aaatnatntt tcnnnnggaa aatnttgcct ccacccgnaa 240  
 attnctcccg ggtagtgcct nttnnggggn cngccangtt tcccaggctg ctanaatcgt 300  
 actaaagntt naagtgggan tncaaatgaa aacctnncac agagnatccn taccogactg 360  
 tnnntnccct tcgcccctng actctgcnnng agcccaatac ccnngngnat gtccccngn 420  
 nnngegnenc tgaaannnnn tcgnggctnn gancatcang gggcttcgca tcaaaagcnn 480  
 cgtttcncaat naaggcaett tngcctcctc caaccnctng cctcnnccta tttngecgtc 540  
 nggttcnccct acgctnnntg cncctnnntn ganattttnc ccgcctnggg naancctcct 600  
 gnaatgggta gggntctntc ttttnaccnn gnggtntact aatcnctnc acgctnctc 660  
 tctcnacccc cccctttttt caatcccanc ggcnaatggg gtctccccnn ogangggggg 720  
 nnnccannnc c

<210> 29  
 <211> 622  
 <212> DNA  
 <213> Homo sapien

<220>

<221> misc feature  
 <222> (1)...(822)  
 <223> n = A,T,C or G

<400> 29

actagtcacag	tgtggtggaa	ttccattgtg	ttggggmenc	ttctatgant	antnttagat	60
cgctcanacc	tcacanccto	ccnacnangc	ctataangaa	nannaataga	notgtncnnt	120
atntntacnc	tcatanncct	cnnnacccac	tcctctttaa	ccntactgt	gcctatngcn	180
tnctantct	ntgcegectn	cnanccacn	gtgggcccac	cnenngnatt	ctenatctcc	240
tcnccatntn	gcctananta	ngtncatacc	ctataccctac	nccuatgctc	nnnctaanen	300
tcctnanlt	annnlaccta	ccactgacnt	ngaettctnc	atnancctct	cttllgaatc	360
tactctgact	cccacngcct	annnattagc	anctlccccc	nacnatntct	caacccaatc	420
ntcaaccccc	ctctctancctg	ltcnccaccc	nttncctccg	ctcccnnac	ccccccctc	480
ccaastaccc	nccacctgac	nccctaccn	cacctcccg	gcaagccn	ggnccttan	540
cccttggaat	cacnatngga	naaaaaaac	cchaaetctc	tanncnmat	ctccctaana	600
aatnctctn	naatttactn	ncantnccat	caanccracn	tgaacnnaa	ccccgtttt	660
tanatccctt	ctttcgaaaa	ccnacccttt	anncccac	ctttngggcc	ccccnctnc	720
ccnaatgaag	gnccccaat	cnangaaacg	nccttgaaa	anchnaggca	anannntccg	780
canatccctat	cccttanttn	ggggncctt	nccngggcc	cc		822

<210> 30  
 <211> 787  
 <212> DNA  
 <213> Homo sapien

<220>

<221> misc feature  
 <222> (1)...(787)  
 <223> n = A,T,C or G

<400> 30

cgcccgctg	ctctggcaca	tgcctcctga	atggcatcaa	aagtgatgga	ctgcccattg	60
ctagagaaga	ccttctctcc	tactgtcatt	atggagccct	gcagactgag	ggctcccctt	120
gtctgcagga	tttgatgtct	gaagtgttgg	agtgtggctt	ggagctcctc	atctacatna	180
gctggaagcc	ctggaggggc	tctctcgcca	gcctcccctt	tctctccacg	ctctccangg	240
acaccagggg	ctccaggcag	cccattatto	ccagnangac	atggtgttct	tcacgcggga	300
cccatggggc	ctgnaaggcc	agggtctcct	ttgacacccat	ctctcccgtc	ctgctggcca	360
ggcgtggga	tcactanttt	ctanaacggc	cgccaccnccg	gtgggagctc	cagcttttgt	420
tcctnttaat	gaaggttaat	tgcncgcttg	gggtaatcat	nggtcanaac	tnnttctgt	480
gtgaaattgt	ttntcccctc	ncnatccnc	ccnacatacn	aacccgggan	cataaagtgt	540
taaagccctg	gggtngcctn	nngaatnaac	tnaactcaat	taattgcgtt	ggctcatggc	600
ccgctttccn	cttnggaaac	ctgtentccc	ctgcnttntt	gaatcgcca	ccccccnggg	660
aaaagcglll	lgctttttng	qgggtcctt	ccncttccc	ctcncctaan	ccctnccctt	720
ccgltgttnc	nggtngcggg	gaangggnat	nnnclccncc	naaggyggng	agnnngntat	780
ccccaaa						787

<210> 31  
 <211> 799  
 <212> DNA  
 <213> Homo sapien

<220>

<221> misc feature  
 <222> (1)...(799)  
 <223> n = A,T,C or G

<400> 31

tttttttttt	tttttttggc	gatgctactg	tttaattgca	ggaggtgggg	gtgtgtgtac	60
catgtaccag	ggtatttaga	agcaagaagg	aaggaggagg	ggtagagcgc	cctgctgagc	120
aacaaaggac	lcttccagcc	ttctctgtct	gtctcttggc	gcaggccacat	ggggaggcct	180
cccgagggtt	ggggggcccc	agtccagggg	tgggagcaat	acanggggtg	ggagtgggtg	240
qtggtctgln	cnaatggcct	uncananaac	cctacgcltc	ttgacacctg	gatttcaacc	300

14

ggggaccttc	tgttctccca	nggnaacttc	ntnnatctcn	aaagaacaca	actgtttctt	360
cngcanttct	ggctgttcat	ggaaagcaca	ggtgtccnat	ttnggctggg	acttggtaca	420
tatggttccg	gcccacotct	cccntcnaaa	aagtaattca	ccccccccc	ccntctnttg	480
cctgggccc	taantaccca	cacoggaact	canttanitta	ttcatcting	gntgggcttg	540
ntnatcnccn	cctgaangcg	ccaagttaga	aggccaacgc	gtcccccttc	cccatagnan	600
nttttncnt	canctaattc	ccccccnggc	aacnatacaa	ccccccccc	tggggggccc	660
agcccanggc	ccccgnetcg	ggnnncnngn	cncgnantcc	ccaggntctc	ccantcngne	720
ccnnngcccc	ccccgacgca	gaacanaagg	ntngagccnc	cgcaannnnn	nggttncnac	780
ctcgccccc	ccnnccgng					799

<210> 32  
 <211> 789  
 <212> DNA  
 <213> Homo sapien  
  
 <220>  
 <221> misc feature  
 <222> (1) ... (789)  
 <223> n = A, T, C or G

tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	60
tttttncnag	ggcagggtta	ttgacaacct	cnogggacac	aancaggctg	gggacaggac	120
ggcaacaggc	tccggcgggc	ggggcgggcg	ccctacctgc	ggtaccaaatt	ntgcagcttc	180
cgtcccgct	tgatnttcc	ctgcagctgc	aggatgccnt	aaaacagggc	ctcgccntn	240
ggtgggcaac	ctgggatttn	aatttccaag	ggcacaatgc	ggtccgancc	cctcaccacc	300
nattaggaat	agtgtnttta	ccnccncccg	ttggcncact	ccccntggaa	accacttntc	360
gcggctccgg	catctggtct	taazcccttg	aaacnctggg	gccctctttt	tggttantnt	420
ncnggcaca	atcatnactc	agactggcnc	gggttgcccc	caaaaaancc	ccccaaaaac	480
ggncatgtc	ttncggggt	tgttgmatn	tnccalccct	ccccggcnca	ncaggncacc	540
ccaaaagttc	ttgnggccc	caaaaaanct	ccggggggnc	ccagtttcaa	caaagtcacc	600
ccccllggcc	cccaaatcct	ccccccgntt	nctgggtttg	ggaacccacg	cctctnncct	660
tggngggcaa	gntggntccc	ccttcggggc	cccggtgggc	ccnnctctaa	ngaaaaancc	720
ntcctnncca	ccatcccccc	nngnnacgnc	tancaangna	tccctttttt	tanaaacggg	780
ccccccnag						799

<210> 33  
 <211> 793  
 <212> DNA  
 <213> Homo sapien  
  
 <220>  
 <221> misc feature  
 <222> (1) ... (793)  
 <223> n = A, T, C or G

gacaggaac	gttggttggg	ggagcaccct	tctatacgac	ttacaggaca	gcagatgggg	60
aattcalggc	tgttgagaca	atanaacccc	agttctacga	gctgctgac	aaaggacttg	120
gaactaaagtc	tgatgaactt	cccaatcaga	tgagcatgga	tgattggcca	gaaatgaana	180
agaagtgttc	agatgtatct	gcaagaaga	cgaaggcaga	gtggtgtcaa	atctttgacg	240
gcacagatgc	ctgtgtgact	ccggttctga	cttttgagga	ggttgttcat	catgatcaca	300
acaangaacg	gggtctgttt	atcaccantg	aggagcagga	cgtgagcccc	cgccctgcac	360
ctctgctgtt	aaacaccccc	gccatccctt	ctttcaaaaag	ggatccacta	cttctagagc	420
ggncgccacc	gcggtggage	tccagctttt	gttcccttta	gtgaggttta	attgcgpgct	480
tggcgtaate	atggtcatan	ctgtttccctg	tgtgaaattg	ttatccgctc	acaattccac	540
acaacatacg	anccggaagc	atnaaatttt	aaagcctggg	ggtngcctaa	tgantgaact	600
nactcacatt	aattggcttt	gcgctcaactg	cccgctttcc	agtcgggaaa	acctgtccct	660
gccagctgcc	nttaatgaat	cnggccaccc	cccggggaaa	aggcngtttg	cttnttgggg	720
cgcncctccc	gctttctcgc	ttcctgaant	ccttcccccc	ggtctttcgg	cttgcggcna	780
acggtatcna	cct					793

15

<210> 34  
 <211> 756  
 <212> DNA  
 <213> Homo sapien  
  
 <220>  
 <221> misc feature  
 <222> (1)...(756)  
 <223> n = A,T,C or G

<400> 34  
 gccgcgaccg gcaatgtacga gcaactcaag ggcgagtgga accgtaaaag ccccaatctt 60  
 ancaagtggg gggaanagct ggggtogactc aagctagtgc ttctggagct caacttcttg 120  
 ccaaccacag ggaccaagct gaccaaaacag cagctaattc tggcccgtag catactggag 180  
 atcggggccc aatggagcat cctacgcaan gacatccctt ccttcgagcg ctacatggcc 240  
 cagctcaaat gctactactt tgattacaan gacgagctcc ccgagtcagc ctatatgcac 300  
 cagctcttgg gectcaacct cctcttctctg ctgtcccaga accgggtggc tgantnccac 360  
 accganttgg anoggttgcg tgcaccaanga catacanacc aatgtctaca tcnaccacca 420  
 gtgtctctga gcaatactga tgganggcag ctaccncaaa gtnttctctg ccnagggtaa 480  
 catcccccgc cgagagctac acctctctca ttgacatctt gctcgacact atcagggatg 540  
 acaatcgcn ggttgctcca gaaaggctnc aanaanatcc ttttctctga aggcccccgg 600  
 atnctctagt nctagatcg gcccgcctac gcggtgganc ctccaaacct tcgttacct 660  
 ttaactgaggg tlnaltgcgg ccttggcgt tatcatgggc acnccngttn cctgtgttga 720  
 akttkliaac ccccccacat tccacgcena celtng 756

<210> 35  
 <211> 834  
 <212> DNA  
 <213> Homo sapien  
  
 <220>  
 <221> misc feature  
 <222> (1)...(834)  
 <223> n = A,T,C or G

<400> 35  
 ggggatctct anactnacct gnatgcattg ttgtcggtgt ggtcgctgtc gatgaanatt 60  
 accgggtctt tgccttctga gctctcggtt gctgtnttta agttgctcag tctgccgtca 120  
 tagtcagaca cctctcttgg caaaaaacaa caggatntga gtcttgattt caacctcaat 180  
 aatctctcng gctgtctctc cgggtgaactc gatgaanag qccagctggt tgtgtntgat 240  
 aaantccanc angttctctt tgggtgaccc ccttcaaaag ttgttccggc ctctcatcaa 300  
 cttctnnaan angannancc canctttgtc gagctgggat lgganacaa cgtcactgtt 360  
 ggaaactgat cccaaatggt atgtcatcca tgcctctctg tgcctgcgaa aaacttgctt 420  
 ggcncaaatc cgaactcccn tcttgaagag aagccnatca cccccccctc cctggactcc 480  
 nncaaagact ctncgcctnc cccntccnng cagggttggg ggcannccgg gcccttgcgc 540  
 ttcttcagcc agttcactat nttcatcagc cctctcgcca gctgttntat tcttgggggg 600  
 ggaanccgtc tctcctctcc tgaannaact ttgacccgtg gaatagccgc gcttccctnt 660  
 acntnctggg ccgggttcaa antccctccn ttgcnntcn cctcgggcca ttctggattt 720  
 nccnaacttt ttccttcccc cncctccnng ngtttgntt ttctatnggg ccccaactct 780  
 gctnttggcc antcccttgg gggcctntan cncctctnt ggtccctntg ggcc 834

<210> 36  
 <211> 814  
 <212> DNA  
 <213> Homo sapien  
  
 <220>  
 <221> misc feature  
 <222> (1)...(814)  
 <223> n = A,T,C or G

<400> 36

cggnccgcttt	ccngcccgccg	cccgttttcca	tgacnaaggc	tcccttcang	tlaaatacnn	60
cctagnaaac	attaatgggt	tgtctacta	atcatcata	cnaaccagta	agcctgccc	120
naacgccaac	tcaggccatt	cctaccaaag	gaagaaaggc	tggctctctc	ccccccgta	180
ggaaggccct	gccttgtaag	acaccacaat	ncggctgcat	ctnaagctct	gtgttttact	240
aatggaaaca	aaataaaca	aanaggtttt	gtlctcatgg	ctgcccaccg	cagcctggca	300
ctaaaaacanc	ccagcgutca	cttctgcttg	ganaaatctt	ctttgctctt	tgggacatca	360
ggcttgctgg	talcaactgc	acnttlccac	ccagctgggc	nccttcccc	catntttgtc	420
onlganctgg	gaagcctgaa	nottagtctc	caaaagctct	ngcccaraag	accggccacc	480
agggggangtc	ntttncagtg	gctclgccc	anantaccn	tctctcnn	gaataaaaaag	540
gcccclgacc	ganatgcttc	cancancctt	taagaccat	aatcctngaa	ccatgggtgc	600
cttcgggtct	gatccnaaag	gaatgttctt	gggtcccant	cctcctttg	tttcttaagt	660
tgtnttgac	cctgtctngn	atnaccnaan	tganatcccc	ngaagcacc	tnccctggc	720
atttganttt	cntaaattct	ctgcctacn	notgaaagca	cnattccctn	ggcncnnaan	780
ggngaactca	agaaggctctn	ngaaaaacca	cncn			814

<210> 37  
 <211> 760  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc feature  
 <222> (1)...(760)  
 <223> n = A, T, C or G

gcctgctgct	ctlctcaca	gttcttcttg	ttgccalac	aaccaccata	ggtaaagcgg	60
gcgcagtgct	cgttgaaagg	gttctagtag	cagcgccggg	tgtctcctt	gcagagtcct	120
gtgtctggca	ggctcccgca	atgccctttg	tactggggga	aatggatgag	ctggagctcg	180
tcnaaaccac	tngtgtattt	ttcaccangca	gcctcctccg	aagctccggg	gcagttgggg	240
gtgtcgtcac	actccactaa	actgtcgatn	cancagccca	ttgtgacagc	ggaactgggt	300
gggctgacag	gtgccagaac	acactggatn	ggcctttcca	tggaaaggcc	tgggggaaat	360
cncctnanc	caaacctgct	ctcaaaaggcc	accttgacac	cccgcacagg	ctagaaatgc	420
actcttcttc	ccaaaggtag	ttgttcttgt	tggccaaagca	ncctccanca	aaccaaaanc	480
ttgcaaaatc	tgtccgtggg	gggtcatnnn	taccanggtt	ggggaaanaa	accggcgngn	540
ganccnccct	gtttgaatgc	naaggnaata	atcctcctgt	cttgccttggg	tggaaanagca	600
caattgaact	gttaacnttg	ggcggngtcc	cncctngggg	gtctgaaact	aatcacccgc	660
actggaaaaa	ggtangtgcc	ttccttgaat	tcccaaatnt	ccctngnttt	tgggttnttt	720
ctcctctncc	ctaaaaatcg	tttccccccc	cctangggcg			760

<210> 38  
 <211> 724  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc feature  
 <222> (1)...(724)  
 <223> n = A, T, C or G

tttttttttt	tttttttttt	tttttttttt	tttttaaaaa	ccccctccat	tgaatgaaaa	60
cttccnaaat	tgtecaaccc	cctcnnccaa	atnnccattt	ccgggggggg	gttccaaacc	120
caaattaatt	ttgganttta	aattaaatnt	tnattngggg	aaanaanccaa	atgtnaagaa	180
aatttaaccc	attatnaact	taaatnccn	gaaccccntg	gnttccaaaa	atttttaacc	240
cttaaatccc	tccgaaattg	ntaanggaaa	accaaattcn	cctaaggctn	tttgaagggt	300
ngatttaaac	ccccctnant	ctttttnacc	cnnngctnaa	ntatttngnt	tccgggtgtt	360
tccntntaan	cntnggtaec	tcccgmtaat	gaannnccct	aanccaatta	aaccgaattt	420
tttttgaatt	ggaaattccn	ngggaattna	ccgggggttt	tcccttttgg	gggccalnc	480
cccnctttcg	gggtttgggn	ntagggttga	tttttnnang	nccccacaaa	ncucccaana	540
aaaaaactcc	caagnnltta	ctngaattnc	ccccctccca	ggccttttgg	gaaggngggg	600
ttnttgyggg	ccngggantt	cnlcccccnn	ttncnncccc	ccccccnggt	aaanggttat	660

ngnnttttgggt ttttggggccc ctttannnggac cticcgggatn gaaattaaat ccccggggncg 720  
gcgg 724

<210> 39  
<211> 751  
<212> DNA  
<213> Homo sapien

<220>  
<221> misc feature  
<222> (1)...(751)  
<223> n = A,T,C or G

<400> 39  
tttttttttt tttttctttg ctcccattta atttttattt tgaatttttt teatgctgca 60  
caacacacaa ttatlllcat ttgtttcttt tttttcattt tttttgtttg ctgctgctgt 120  
tttattttatt tttactgaaa gtgagagggg acttttgttg ctttttttcc tttttctgta 180  
ggccgcctta agttttctaa atttggaaca tctaaagcaag ctgaanngaa aaggggggtt 240  
cgcaaaatca ctccgggggaa nggaaagggt gttttgttaa tcatgcccta tgggtgggtga 300  
ttaactgctt gtacaattac ntttcacttt taattaattg tgctnaange ttttaattana 360  
cttggggggt cctcccccac accaaccrcn ctgacaaaaa gtgccngccc tcaaatnatg 420  
tcccggcnnt cnttgabaca cacngcngaa ngttctcatt ntcccnccnc caggtnaaaa 480  
tgaagggtta ccatntttta cncacactcc acntggcnnn gcctgaatcc tcnaaaancc 540  
cctcaaanen aatttctnng ccccggtcnc gcntnngtcc cncccgggct cggggaantn 600  
caccocnga annccntnnc naacnaaatt ccgaaaatat tcccnntcnc tcaattcccc 660  
cnnagactnt cctcnncnan cncaattttc tttntntcac gaacncgnnc cnnaaaatgn 720  
nnnnnccctc cncnngtccn naatcnccan c 751

<210> 40  
<211> 753  
<212> DNA  
<213> Homo sapien

<220>  
<221> misc feature  
<222> (1)...(753)  
<223> n = A,T,C or G

<400> 40  
gtggtatttt ctgtaagatc aggtgttccr cctctgtagg tttagagga acauccctcat 60  
agatgaaaac ccccccggag cagcagcaet gcaactgcca agcagccggg qlaggagggg 120  
cgccctatgc acagctgggc cettgagaca gcagggtctc gatgtcaggc tcatgtcaa 180  
tgggtctggaa ggcggcggtg tacctgcgta gggguacac gcacggggcc accaggaact 240  
tctcaaagtt ccaggcaacn tegtgcgac acacgggaga ccagggtgatn agcttgggggt 300  
cggtcataac cgcgggtggc tegtgcgctg gacgtggcag ggcctcccg caggaaaggcna 360  
ataaaagggtg cgccccccga cegtccnct cgcacttctc naanaccatg angttgggct 420  
cnaaccaccc accanncggg acttccclga nggaattccc aaatctcttc gntcttgggc 480  
ttctnctgat gcccctanct gttgcccnngn atgccaancc nccccancc cgggggtcct 540  
aaanccaccc cctccclent kcatclgggt tntnttccc ggaacntggt tectctcaag 600  
ggancccata tctcnaccan tactcaacnt nccccccnt gnnacccanc cttctanngn 660  
ttcccncccg nctclcgcc cntcaaanen gcttncaana cctgggtctg ccttcccccc 720  
tnccttatct gnaaccnccn tttgtctcan tnt 753

<210> 41  
<211> 341  
<212> DNA  
<213> Homo sapien

<400> 41  
actatatcca tcacaacaga catgcttcat cccatagaact tcttgacata gcttcaaatg 60  
agtgaacca tccctgattt atatacatat atgtttctcag tattttggga gcttccac 120  
ttctttaaac ctgttcatt atgaactctg aaaaatgga tttgtgaaga gttaaaaagt 180

tatagcttgt	ttacgtagta	agtttttgaa	gtctacattc	aatccagaca	cttagttgag	240
tgtaaactg	tgatttttaa	aaaatatcat	ttgagaatat	tctctcagag	gtaftttcat	300
ttttactttt	tgattaattg	tgttttatat	atcagggtag	t		341

<210> 42  
 <211> 101  
 <212> DNA  
 <213> Homo sapien

<400> 42						
acttactgaa	tttagttctg	tgctcttctt	tatttctgtg	tgctatcctaa	ctactttgat	60
gtttcnaaca	ttctaaataa	ataattttca	gtggcttcac	a		101

<210> 43  
 <211> 305  
 <212> DNA  
 <213> Homo sapien

<400> 43						
acatctttgt	tacagtctaa	gatgtgttct	taaatacaca	ttccttctctg	gtctcacc	60
tccaggggtg	tctcacactg	taattagagc	tattgaggag	tctttacagc	aaattaagat	120
tcagatgctt	tgctaagtct	agagttctag	agttatgttt	cagaaagtct	aagaaaccca	180
cctcttgaga	ggtcagtaaa	gaggacttaa	tatttcatat	ctacaaaatg	accaaggat	240
tggatacaga	acgagagtta	tcctggataa	ctcagagctg	agtacctgcc	cggggggcgc	300
tcgaa						305

<210> 44  
 <211> 852  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc feature  
 <222> (1) ... (852)  
 <223> n = A, T, C or G

<400> 44						
acataaatat	cagagaaaag	tagtctttga	aatatttaacg	tccaggagtt	ctttgtttct	60
gattatttgg	tgtgtgtttt	ggtttgtgtc	caaagtattg	gcagcttcag	ttttcatttt	120
ctctccatcc	tggggcatcc	ttcccaaat	tataaccag	tcttctgcca	tccacacgt	180
ccagaatttc	tctttttag	taatatctca	tagctcggt	gagctttcca	tagglaacgc	240
tgctgtgtgt	cttcttttta	ccccatagct	gagccactgc	ctctgatttc	aagaaacctga	300
agacggccctc	agatcggtct	tcccatttta	ttaatcctgg	gttcttgtct	gggltcasga	360
ggatgtcgcg	gatgaattcc	cataagttag	tccctctcgg	gttqlacttc	ttggtgtggc	420
acttggcagg	gggtctttgc	tcctttttca	tatcaggtga	ctctgcacac	ggaaggtgac	480
tggtggllgt	catggagatc	tgagcccgcc	agaaaglttc	gctgtccac	aaactactg	540
tgtaaccata	gttggctgla	tataaatagt	tctnqtcttt	ccagggtgttc	atgatggaag	600
gctcagtttg	ttcagltclg	acaactgacat	tgtgtgtggc	ctggacacgg	tcactactgc	660
actggccgtt	ccacttcaga	tgtlgaacgt	tgtgttagag	gagntgcccc	gocgtccctg	720
ccgcccggtt	gaactcttgc	aaactcatgc	tgcaaggtg	ctcgccgttg	atgtcgaact	780
cntggaaagg	gatacaattg	gcataccagct	ggttgggtgtc	caggaggtga	tggagccact	840
cccacacctg	gt					852

<210> 45  
 <211> 234  
 <212> DNA  
 <213> Homo sapien

<400> 45						
acaacagacc	cttgctcgct	aacgacctca	tgctcatcaa	gttggacgaa	tccglgtccg	60
agtctgacac	catccggagc	atcagcattg	cttcgcagtg	ccctaccgag	gggaacclctt	120
gcctcgtttc	tggctggggt	ctgctgggga	acggcagaat	gcctaccgtg	ctgcagtgccg	180



tgaacgtgtc ggtgggtgtct gagggaggtct gcagtaagct ctatgaccog ctgt 234

<210> 46  
 <211> 590  
 <212> DNA  
 <213> Homo sapien  
 <220>  
 <221> misc feature  
 <222> (1)...(590)  
 <223> n = A,T,C or G

<400> 46  
 acttttttatt taaatgttta taaggcagat ctatgagaat gatagaaaac atggtgtgta 60  
 atttgatagc aatatttttg agattacaga gttttagtaa ttaccaatta cacagttaaa 120  
 aagaagataa tatattccaa gcanatacaa aatatctaata gaagatcaa ggcaggaaaa 180  
 tgantataac taattgacaa tggaaaaatca attttaatgt gaattgcaca ttatccttta 240  
 aaagotttca aaanaanaaa ttattgcagt ctanttaatt caaacagtgt taaatggat 300  
 caggataaen aactgaaggc canaaagaat taattttcac ttcattgtaac ncacccanac 360  
 ttacaatggc ttaaatgcan ggaaaaagca gtgggaagtag ggaagtantc aaggtctttc 420  
 tggctcttaa tctgccttac tctttgggtg tggctttgat cctctggaga cagctgccag 480  
 ggctcctgtt atatccacaa tcccagcagc aagatgaagg gatgaaaaag gacacatgct 540  
 gccttccttt gagggagactt catctcactg gccaacactc agtcacatgt 590

<210> 47  
 <211> 774  
 <212> DNA  
 <213> Homo sapien  
 <220>  
 <221> misc feature  
 <222> (1)...(774)  
 <223> n = A,T,C or G

<400> 47  
 acaagggggc ataatagaag agtggggana gattttaaag aaggaaaaaa aacgaggccc 60  
 tgaacagaat tctcctgnac aacggggcct caaataaatt ttcttgggga ggttcaagac 120  
 gcttcaactgc ttgaaactta aatggatgtg ggacanaatt ttctgtaatg acctgaggg 180  
 cattacagac gggacclclgg qaggaaggat aaacagaaag gggacaaagg ctaatcccaa 240  
 aacatcaaaq aaaggaaagt ggcgtcatc ctcuagcct acacagttct ccagggtct 300  
 cctcaterct ggaggacgac aglqqaggaa caactgaca lqlccccagg ctctgtgtg 360  
 ctggctcctg gtcttcagcc cccagctctg gaagencacn ctctgtgat cctggtggc 420  
 ccacactcct tgaacacaca tccrcagggt atattcctgg acclqgctga acctcctatt 480  
 cctacttccg agatgccttg ctccctgcag cctgtcaaaa tcccactcnc cctcuaaaac 540  
 aoggcattgg aagcctttct gacttgctg attactccag catcllqaa caatccctga 600  
 ttccccactc cttagaggca agatagggtg gttaagagta gggctggacc ccttggagcc 660  
 aggtgtctgg cttaaaattn tggctcattt acgagctatg ggaccttggg caagtnatct 720  
 toacttctat gggcmtcatt ttgtttatcc tgcaaaatgg gggataataa tagt 774

<210> 48  
 <211> 124  
 <212> DNA  
 <213> Homo sapien  
 <220>  
 <221> misc feature  
 <222> (1)...(124)  
 <223> n = A,T,C or G

<400> 48  
 canaaattga aattttataa aaaggcattt ttctcttata tccalaaant gatataattt 60  
 ttgcaantat anaastgtgt cataaattat aatgttctt saltacgct caacgcact 120

tggt

124

<210> 49  
 <211> 147  
 <212> DNA  
 <213> Homo sapien  
 <220>  
 <221> misc\_feature  
 <222> {1}...{147}  
 <223> n = A,T,C or G

<400> 49  
 gccgatgcta ctatttttatt gcaggagggtg ggggtgtttt tattattctc tcaacagctt 60  
 tgtggctaca ggtgggtgtct gactgcattt aaaaattttt tacgggtgat tgcaaaaatt 120  
 ttaggggacc catatcccaa qcantgt 147

<210> 50  
 <211> 107  
 <212> DNA  
 <213> Homo sapien

<400> 50  
 acattaaatt aataaaagga ctgttgggggt tctgctaaaa cacatggctt gatattattgc 60  
 atggtttgag gttaggagga gttaggcata tgttttggga gagggggt 107

<210> 51  
 <211> 204  
 <212> DNA  
 <213> Homo sapien

<400> 51  
 gtccatagga gtctagggga cacacgcttc tggggtcacg gggcgcgcgc acttgcccg 60  
 cgggaaggaa aggcagagaa gtgacacgt caggggggaaa tgacagaaag gaaaatcaag 120  
 gccttgcaag gtcagaaagg ggactcaggg ctccaccac agccctgcc cacttggcca 180  
 cctccctttt gggaccagca atgt 204

<210> 52  
 <211> 491  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> {1}...{491}  
 <223> n = A,T,C or G

<400> 52  
 acaaagataa catttatctt ataacaabaa tttgatagtt tttaagggtta gtatttggla 60  
 gggatlltc caaaagacta aagagataac tcaggtaaaa agttagaaat gtataaaaca 120  
 ccatcagaca ggttttttaa aaacaacata ttacaaaatt agacaatcat ctttaaaaaa 180  
 aaaaacttct gtatcaattt ctttctgttc aaatgactga cttaantatt tttaaatatt 240  
 tcaaaacac ttcctcaaaa attttcaana tggtagcttt canatgtacc ctcagtccca 300  
 atgttgetca gataaataaa tctcgtgaga acttaccacc caccacaagc tttctggggc 360  
 atgcaacagt gtcttttctt tcttttttct tttttttttt ttacaggcac agaaactcat 420  
 caattttatt tggataacaa aggggtctca aatttatatt aaaaacaaat ccaagttaat 480  
 atcaactctg t 491

<210> 53  
 <211> 484  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(484)  
 <223> n = A,T,C or G

<400> 53  
 acataattta gcagggttaa ttaccataag atgctattta ttaanaggtn tatgatctga 60  
 gtattaacag ttgctgaagt ttggtatttt tatgcagcat ttctcttttg ctttgataac 120  
 actacagaac cottaaggac actgaaaatt agtaagttaa gttcagaaac attagctgct 180  
 caatcaaatc totacataac actatagtaa ttaaaacgtt aaaaaaagt gttgaaatct 240  
 gcactagtat anaccgctcc tgtcaggata anactgcttt ggacacagaa gggaaaaanc 300  
 agctttgant ttctttgtgc tgatangagg aaaggctgaa ttaccttgtt goctctcuct 360  
 aatgattggc aggtcnggta aatnccaaaa catatccaa ctcaacactt cttttccncc 420  
 tancctgant ctgtgtattc cagganccagg cggatggaat gggccagccc nccgatgttc 480  
 cant 484

<210> 54  
 <211> 151  
 <212> DNA  
 <213> Homo sapien

<400> 54  
 actaaacctc gtgcttctga actccataca gaaaacgggtg ccctccctga acacgggtgg 60  
 ccactgggta tactgctgac aaccgcaaca acaaaaacac aaatccttgg cactggctag 120  
 tctatgtcct ctcaagtgc tttttgtttg t 151

<210> 55  
 <211> 91  
 <212> DNA  
 <213> Homo sapien

<400> 55  
 acctggettq tctccgggtg qttccggggc ccccccacgg tcccacagac ggacactttc 60  
 gccctcncgt ggataclcga gccaaaglcg t 91

<210> 56  
 <211> 133  
 <212> DNA  
 <213> Homo sapien

<400> 56  
 ggccgatgtg cgttggttat atacaaatat gtcattttat gtaegggact tgagtatact 60  
 tggatttttg gtatctgttg gttgggggga cggccagga accaatacc catggatacc 120  
 aagggaacac tgt 133

<210> 57  
 <211> 147  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(147)  
 <223> n = A,T,C or G

<400> 57  
 actctggaga acctgagccg ctgctccgcc tctgggatga ggtgatgcan gcngtggcgc 60  
 gaotgggagc tgagcccttc cctttgcgcc tgcctcagag gattgttgcc gacntgcana 120  
 tctcantggg ctggatncat gcagggt 147

<210> 58

<211> 198  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc feature  
 <222> (1)...(198)  
 <223> n = A,T,C or G

<400> 58  
 acagggatct aggtttnaag ttattgtatc tgtaaaatac attgaatttt ctgtatactc 60  
 tgatttcata caittatcct ttaaaaaaga tgtaaatctt aatttttatg ccattctatta 120  
 atttaccast gaggtaacct gtatatgaga agtcatgata gcautgaatt ttaactagtt 180  
 ttgacttcta agtttggg 198

<210> 59  
 <211> 330  
 <212> DNA  
 <213> Homo sapien

<400> 59  
 acaacaaatg gggttgagg aagtcttacc agcaaaactg gtgatggcta ctgaaaagat 60  
 ccattgaaaa ttatcattaa tgattttaaa tgacaagtta tcaaaaactc actcaatttt 120  
 caccgtgtgt agcttgctaa aatgggagtt aactctagag caaatatagt atcttctgaa 180  
 tacagtcaat aatgacaaa gccagggcct acaggtgggt tccagacttt ccagaccag 240  
 cagaaggaat ctattttacc acatggatct ccgtctgtgc tcaaaatacc taatgatatt 300  
 tttcgtcttt attggaactt ttgaagagt 330

<210> 60  
 <211> 175  
 <212> DNA  
 <213> Homo sapien

<400> 60  
 accgtgggtg ccttctacat tcttgacggc tcttcacaa acatctgggt ctacttgggc 60  
 gtctgtgggt ccttctctt catctctac cagctgggtg tgcctcaga ctttgcgcac 120  
 tcttggaacc agcgggtggc gggcaaggcc gaggagtgc attcccgtgc ctggt 175

<210> 61  
 <211> 154  
 <212> DNA  
 <213> Homo sapien

<400> 61  
 accnacttt tctctctg agcagtcctg acttctcact gctacatgat gagggtgagt 60  
 ggttggtgt cttcaccagt atctctcct ttcggatct gctgagcagg acagcagtc 120  
 tggactgcac agcccccggg ctccacattg ctgt 154

<210> 62  
 <211> 30  
 <212> DNA  
 <213> Homo sapien

<400> 62  
 cgctcgagcc ctatagtgag tctgattaga 30

<210> 63  
 <211> 89  
 <212> DNA  
 <213> Homo sapi n

<400> 63

23

acaaagtcatt tcagcacccct ttgcctcttca aaactgacca tcttttatat ttaatgcctc 60  
ctgtatgaal aaaaatggtt atgtcaagt 89

<210> 64  
<211> 97  
<212> DNA  
<213> Homo sapien

<400> 64  
accggagtaa ctgagtcggg acgctgaatc lgaatccacc aataaataaa ggttctgcag 60  
aatcagtga tccaggattg gtccttggat ctgggt 97

<210> 65  
<211> 377  
<212> DNA  
<213> Homo sapien

<220>  
<221> misc feature  
<222> (1)..(377)  
<223> n = A,T,C or G

<400> 65  
acaacuaaaa ntcccttctt taggcoactg atggaaacct ggaacccccct tttgatggca 60  
gcattggcgtc ctggccttg acacagcggc tgggggttgg gctntcccaa accgcacacc 120  
ccaaacctgg tctaccaca nttctggcta tgggctgtct ctgccactga acatcagggt 180  
tcggctcatat natgaatcc caanqgggac agaggtcagt agagggaagct caatgagaaa 240  
ggtgctgttt gctcagcccg aaaaacagclq cctggcattc gccgctgaac tatgaacccg 300  
tgggggtgaa ctaccccaan gaggaatcat gcttggguga tccaanggtg ccacaggag 360  
ggcgggagg agcatgt 377

<210> 66  
<211> 305  
<212> DNA  
<213> Homo sapien

<400> 66  
acgcctttcc ctacgaattc agggaaagaga ctgtgccttg ccttccctcg ttgttgctg 60  
agaaacccgtg tgcaccttcc caccatatac accctugctc catctttgaa ctcaaacacg 120  
aggaactaac tgaacacclq tctctctccc agtcccaagt tcacctcca tccctcacct 180  
tctccctc tcaggcatat caacactgcu cagcacaggg gccctgaatt tatgtggtt 240  
ttatatatt ltaataaga lqcaatttat gtcattttt aataaagctt gaagattac 300  
tggtt 305

<210> 67  
<211> 385  
<212> DNA  
<213> Homo sapien

<400> 67  
actacacaca ctccacttgc ccttgtgaga caatttgtcc cagcacttta ggaatgctga 60  
ggtcggacca gccacatctc atgtgcaaga ttgcccagca gacatcaggc ctgagagttc 120  
cccttttaaa aaaggggact tgccttaaaa agaagtctag ccacgattgt gttaggcagc 180  
tgtgctgtgc tggagattca cttttgagag agttctcttc tgagacctga tctttagagg 240  
ctgggcagtc ttgcacatga gatggggctg gtctgatctc agcaactcct agtctgcttg 300  
cctctcccag ggcaccagcc tggccacacc tggttacagg gcactctcag atgccatac 360  
catagtttct qtgtagtgg accgt 385

<210> 68  
<211> 73  
<212> DNA  
<213> Homo sapien

<400> 68  
acttaaccag atatattttt accccagatg gggelattct ttgtaaaaa tgaaaataaa 60  
gtttttttta lgg 73

<210> 69  
<211> 536  
<212> DNA  
<213> Homo sapien

<220>  
<221> misc\_feature  
<222> (1)...(536)  
<223> n = A,T,C or G

<400> 69  
actagtccag tgtggtggaa ttccattgtg ttgggggctc tcacctctct ctcttgcagc 60  
tccagctttg tgcctctgct ctgaggagac catggcccag catctgagta cctctgctgct 120  
cctgctggcc accctagctg tggccctggc ctggagcccc aaggaggagg ataggataat 180  
cccggttggc atctataacg cagacctcaa tgatgagtgg gtacagcgtg ccttccactt 240  
cgccatcagc gagtataaca aggccacca agatgactac tacagacgtc cgttgcgggt 300  
actaagagcc aggcacacaga ccgttggggg ggtgattac ttcttcagac tagaggtggg 360  
ccgaaccata tgtaccaagt ccagcccaa cttggacacc tgtgccttuc atgaacagcc 420  
agaactgcag aagaaccagt tgtgctcttt ctagctctac gaagttccct ttgggagaca 480  
gaangtccct gggtagaatc cagggtgtca gaaalocken ygatclgty ccaaggc 536

<210> 70  
<211> 477  
<212> DNA  
<213> Homo sapien

<400> 70  
atgacccta acagggggcc tctcagccct cctaagtacc tcgggctag ccattgtgatt 60  
tcacttccac tccataacgc tctcataact aggcctaata accaacacac taaccatata 120  
ccaatgatgg cgcgatgtaa cagagaaaag cactatccaa ggccaccaca caccacctgt 180  
ccaaaaaggg ctctgatacg ggataatcct atttattacc tcagaagttt tttctcttgc 240  
agggattttt ctgagccttt taccactcca gcttagcccc taacccccaa ctaggaggggc 300  
actggcccc aacaggcatc acccgcctaa atccctaga agtcuccact ctaaacacat 360  
ccgtattact cgcatacaga gtatcaalca cctgagctca ccatagtcta atagaaaca 420  
nucgaancca aattattcaa agcacctgct attacaattt laclnggtct ctatttt 477

<210> 71  
<211> 533  
<212> DNA  
<213> Homo sapien

<220>  
<221> misc\_feature  
<222> (1)...(533)  
<223> n = A,T,C or G

<400> 71  
agagctatag gtacagtgtg atctcagctt tgcaaacaca tttctacat agatagtact 60  
aggtattaat agatattgtaa agaaagaaat cacaccatta ataattggtaa gattggttta 120  
tgtgatttta gtggtatttt tggcaccctt atatattgtt tccaaacttt cagcagtgal 180  
attatttcca taacttaaaa agtgaggttg aaaaagaaaa tctccagcaa gcctctcatt 240  
taaataaagg tttgtcatct llaaaaatac agcaatatgt gactttttta aaaaagctglc 300  
aaatagggtgt gacctacta ataattlatta gaalacatt taauacatc yagtaacctc 360  
agtcagtttg ccttgaaaaa talcaaatat aactctttaga gaaatgtaca laaaagaatg 420  
cttcgtattt ttggaqlang aggttccclc ctcaalttky latllttaa aagtaactgg 480  
taaaaaaaa aalttcaaac agtatataag gctgtaaaaa qaagaattct gcc 533

<210> 72

<211> 511  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(511)  
 <223> n = A,T,C or G

<400> 72  
 tattacggaa aaacacacca cataattcaa ctancaaaaga anactgcttc agggcgtgta 60  
 aaatgaaggg ctccaggga gttatctgat taagaaacac taaggaggg ecaaggctaa 120  
 aagccgcagg atgtctacac tatancaggc gctatctggg ttggctggg gagctgtgga 180  
 aascctggan agattggggtc tgganacgc cgtgggtatt cctcattgtt attacanagt 240  
 gaggttctct gtgtgccac tggtttgaaa accgttctnc aataatgata gaatagtaca 300  
 cacatgagaa ctgaaatggc ccaaacccag aaagaaagcc caactagatc ctgagaanac 360  
 gcttctaggg acaataaccg atgaagaaaa gatggcctcc ttgtgcccc gtctgttatg 420  
 atttctctcc attgcagcna naaacccgtt ctctctaaga aacncagggtg atgatggcna 480  
 aaatacacc cctcttgaag naccnggagg a 511

<210> 73  
 <211> 499  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(499)  
 <223> n = A,T,C or G

<400> 73  
 cagtgcagc actggtgcca gtaccagtag caataacagt gccagtgcc gtgccagcac 60  
 cagtgtggc ttacagtgtg gtgccagcct gaccgccact ctacacattg ggtctctcgc 120  
 tggccttggg ggagctggg ccagcacacag tggcagctct ggtgcctgtg gtttctccta 180  
 caagtgcag tttagatatt gttaatctct ccagttcttc tottcaagcc aggggtgcac 240  
 ctcaaaaacc tactcaaac agcactctag gcagccacta tcaatcaatt gaagttgaca 300  
 ctctgcatta aatctatttg ccatttctga aaaaaaaa aaaaaaagg cggccgctcg 360  
 antctagagg gcccgtttaa acccgctgat cagcctcgac tgtgcctctc anttgcagc 420  
 catctgttgt ttgcccctcc cccgntgctt tctttgaccc tggaaagtgc cactccact 480  
 gtcccttctt aantaaat 499

<210> 74  
 <211> 537  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(537)  
 <223> n = A,T,C or G

<400> 74  
 ttctatagga gaacacacty aggagatact tgaagaattt ggattcagcc gogaagagat 60  
 ttatcagcct auctcagata aaatcattga aagtaataag gtaaaagcta gtctctaact 120  
 tccaggccca cggctcaagt gaatttgaat actgcattta cagtgtagag taacacataa 180  
 catgttatgc atggavacat ggaggaaacag tattacagtg tcoctaccact ctaatcaaga 240  
 aaaganttac agactctgat tclacagtga tgattgaatt ctaaaaatgg taatcattag 300  
 ggcttttgat ttataaactc lgggtactt atactaaatt atggtagtta tactgccttc 360  
 cagtttgccl galataatlg ttgctatlaa gattcttgac ttatatattg aatgggttct 420  
 actgaaaann gaatgatata tcttgaaga catogalata cattcaltta cactcttgat 480  
 tctacaatgt agaaaatgaa ggaaatgccc caaat:gtat ggtgataaaa gtcccg 537

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<210> 75  
 <211> 467  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> {1}...{467}  
 <223> n = A,T,C or G

<400> 75  
 caaanacaat tgttcseaaag atgcaaataa tacactactg ctgcagctca caaacacctc 60  
 tgcataattac acgtacctcc tctgtctcct caagtagtgt ggtctatatt gccatcatca 120  
 cctgctgtct gcttagaaga acggctttct gctgcaangg agagaaatca taacagacgg 180  
 tggcacaagg aggcacatctt ttctcatcgg gttattgtcc ctagaagcgt cttctgagga 240  
 tctagttagg ctttctttct gggtttgggc catttcantt ctcatgtgtg tactattcta 300  
 tcattattgt ataacgggtt tcaaaccnct gggcaacnag agaacctcac tctgtaataa 360  
 caatgaggaa tagccacggg gatctccagc accaaatctc tccatgttnt tccagagctc 420  
 ctccagccaa cccaaatagc cgctgctatn gtgtagaaca tccctgn 467

<210> 76  
 <211> 400  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> {1}...{400}  
 <223> n = A,T,C or G

<400> 76  
 aagctgacag catteggggc gagatgtctc gctccgtggc cttagctgtg ctgcgctac 60  
 tctctcttcc tggcctggag gctatccagc gtactccaaa gattcaggtt tactcacgta 120  
 atccagcaga gaattggaaag tcaaatctcc tgaattgcta tgtgtctggg ttctcatccat 180  
 ccgacattga agttgactta ctgaagaatg gagagagaat tgaaaaagtg gacgattccg 240  
 acctgtcttt cagcaaggac tggctcttct atctcttgta ctacactgaa ttcaacccca 300  
 ctgaaaaaga tgagtatgcc tgcctgtgtg accatgtgac ttgtgtcacg cccaaagatn 360  
 tttagtgagg tccanacatg taagcagcan cctgggaggt 400

<210> 77  
 <211> 248  
 <212> DNA  
 <213> Homo sapien

<400> 77  
 ctggagtgcc ttggtgtttc aagccccctgc aggaagcaga atgcaccttc tgaggcacct 60  
 ccagctgccc cggcggggga tgcgaggctc ggagaccctc tgcccggtg tgattgtgc 120  
 caggcaactgt tcatctcagc tttctgttcc ctttgtctcc ggcaagcgtc tctgtgaaa 180  
 gttcatactc ggagcctgat gtcttaacga ataaaggtcc catgctccac ccgaaaaaaa 240  
 aaaaaaaa 248

<210> 78  
 <211> 201  
 <212> DNA  
 <213> Homo sapien

<400> 78  
 actagtccag tctgglygaa ttccattgtg ttgggccccg cacaatggct accttttaaa 60  
 tcaccacgac cccgccttgc ccgtgccccg cgtgtctgct aacgacagta tgatgcttac 120  
 tctgtacttc ggaacctatc ttatgtaat taatgtatgc ttctttgttt ataaatgcct 180  
 gatttcaaaa aaaaaaaaaa a 201



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<210> 79  
 <211> 552  
 <212> DNA  
 <213> Homo sapien  
 <220>  
 <221> misc\_feature  
 <222> (1)...(552)  
 <223> n = A,T,C or G

<400> 79  
 tccttttgtt aggtttttga gacaacccta gacctaaact gtgtcacaga cttctgaatg 60  
 tttaggcagt gctagtaatt tccctgtaat gattctgtta ttactttcct attctttalt 120  
 cctctttctt ctgaagatta atgaagttga aaattgaggt ggataaatac aaaaaggtag 180  
 tgtgatagta taagtatcta agtgcagatg aaagtgtgtt atatatatcc attcseaat, 240  
 atgcaagtta gtaattactc agggtttaact aaattacttt aatatgctgt tgaacctact 300  
 ctgttccttg gctagaaaaa attataaaca ggactttgtt agtttgggaa gccaaattga 360  
 taatattcta tgtttctaaaa gttagggctat acataaanta tnaagaaata tgggaatttta 420  
 ttcccaggaa tatgggggtc atttatgaat antacccggg anagaagttt tgantnaaac 480  
 cngttttggg taatacgtta atatgtcctn aatnaacaag gcntgactta tttccaaaaa 540  
 aaaaaaaa aa 552

<210> 80  
 <211> 476  
 <212> DNA  
 <213> Homo sapien  
 <220>  
 <221> misc\_feature  
 <222> (1)...(476)  
 <223> n = A,T,C or G

<400> 80  
 acagggattt gagatgctaa ggccccagag atcgtttgat ccaaccctct tattttcaga 60  
 ggggaaaatg gggcctagaa gttacagagc atctagctgg tgcgctggca cccctggcct 120  
 cacacagact cccgagtagc tgggactaca ggcacacagt cactgaagca ggcctgtttt 180  
 gcaattcaag ttgccacctc caacttaazc attcttcata tgtgatgtcc ttagtcacta 240  
 aggttaaaat tttccavcca gaaaaggcaa cttagatuaa atcttagagt actttcctac 300  
 ttttctaaat cctcttcuag cctcactttg agtctcctt ggggggttgat aggaantntc 360  
 tcttggttll ctcaataaaa tctctatcca tctcatgttt aatttggtac gentauaat 420  
 gctgaaaaaa ttaaatgtt ctgglttcnc tttaaaaaaa aaaaaa aaaaaa 476

<210> 81  
 <211> 232  
 <212> DNA  
 <213> Homo sapien  
 <220>  
 <221> misc\_feature  
 <222> (1)...(232)  
 <223> n = A,T,C or G

<400> 81  
 tttttttttg talgcctctn ctglggngtt attgttgcgt ccaacctgga ggagccagat 60  
 ttctttctga tctttcttll ctgggggato ttcttggtc tgccttcca ttcccagcct 120  
 ctcttccca tcttgcaatt ttgttagggt lggaggcgt ttcttggtag cccctcagag 180  
 actcagtcag cgggaataag tcttaggggt gggggtgtgt gcaagccggt ct 232

<210> 82  
 <211> 383  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(383)  
 <223> n = A, T, C or G

<400> 82  
 aggcgggagc agaagctaaa gccaaagccc aagaagagtg gcagtgccag cactgggtgcc 60  
 agtaccagta ccaataacat gccagtgcca gtgccagcac cagtgggtggc ttcaagtctg 120  
 gtgccagcct gaccgccact ctccacatttg ggctcttcgc tggccttggg ggagctgggtg 180  
 ccagcaccag tggcagctct ggtgcctgtg gtttctccta caagtgagat tttagatatt 240  
 gttaatcttg ccagtctttc tcttcaagcc aggggtgcac ctcaaaaacc tactcaaac 300  
 agcaactctng gcagccacta tcaatcaatt gaagttgaca ctctgcatta aatctatttg 360  
 ccatttcasa aaaaaaaaaa aaa 383

<210> 83  
 <211> 494  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(494)  
 <223> n = A, T, C or G

<400> 83  
 accgaattgg gaccgctggc ttataagoga tcatgtcctc cagtattacc tcaacgagca - 60  
 gggagatcga gtctatacgc tgaagaaatt tgacccgatg ggacaacaga cctgctcagc 120  
 ccacccctgct cggttctccc cagatgacaa atactctcga caccgaatca ccataagaa 180  
 acgcttcaag gtgctcatga cccagcaacc ggcccctgtc ctctgagggt ccttaaaactg 240  
 atgtcttttc tggccactgt taccctctgg agactccgta accaaactct tcggactgtg 300  
 agccctgatg ccttttttgc agccatactc lltggcctcc aglctctcgt ggcgatlcat 360  
 tatgcttctg tgaggcactc atggtggcct cccccatnaa ggggaacacat lltgcttttt 420  
 tttccatat tttcaattac naccagaata nltcaqaata aalgaattga aaaaclctta 480  
 aaaaaaaaaa aaaa 494

<210> 84  
 <211> 380  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(380)  
 <223> n = A, T, C or G

<400> 84  
 gctggtagcc tatgqcgtag ccacgggagg qctcctgagg caccgggacag tgaacttccc 60  
 agtatacctgc qccgcgtctt ctcccglncc tacctgcaga tcttcgggca gattccccag 120  
 gaggacatgg acgtggccct catggagcac agcaactgct cglcggagcc cggcttctgg 180  
 gcaaaccttc clggggccca ggccggcacc tgcgtctcnc agtatgcnaa ctggcctggg 240  
 gtgctgclcc tgcctatctt cctgctcgtg gccaacatcc tgcctggcacc lltgctcattg 300  
 ccattgttcag ttacacattc ggcaaaagtac agggcaacag cnatctctac tgggaaggcc 360  
 agcqltnocg cctcatccgg 380

<210> 85  
 <211> 481  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature

&lt;222&gt; {1}...{481}

&lt;223&gt; n = A, T, C or G

&lt;400&gt; 85

gagtagctc	ctccacacc	ttgatgaggt	cgtctgcagt	ggcctctcgc	ttcataccgc	60
tnccatcgtc	atactgtagg	tttgcaccca	cctcctgcac	cttggggcgg	ctaatatcca	120
ggaaactctc	aatcaagtc	cogtcatna	aacctgtggc	tggttctgtc	ttccgctcgg	180
tgtgaagga	tctccagaag	gagtgcctga	tcttccccc	acttttgatg	actttattga	240
gtcagattctg	catgtccagc	aggaggttgt	accagctctc	tgacagttag	gtcaccagcc	300
ctatcatgcc	nttgaacgtg	ccgaagaaca	ccgagccttg	tgtggggggg	gnagtctcac	360
ccagattctg	cattaccaga	nagccgtggc	aaaaganatt	gacaactcgc	ccaggngaa	420
aaagaacacc	tcctggaagt	gctngccgct	cctcgtccnt	tggtggnggc	gcntccctt	480
t						481

&lt;210&gt; 86

&lt;211&gt; 472

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; {1}...{472}

&lt;223&gt; n = A, T, C or G

&lt;400&gt; 86

aacatcttcc	tgtataatgc	tgtgtaatat	cgatccgain	ttgtctgctg	agaattcatt	60
acttggaaaa	gcaacttnaa	gcctggacac	tggtattaaa	attcacaata	tgcaacactt	120
taaacagtgt	gtcaatctgc	tccttaactt	tgtcatcacc	agtctgggaa	taagggtatg	180
cctatttcac	acctgttaaa	aggcgctaa	gcatttttga	ttcaacatct	ttttttttga	240
cacaagtcgg	aaaaangcaa	aagtaaacag	ttnttaactt	gttagccaat	tcactttctt	300
catgggacag	aqccatttga	tttaaaaaag	aaattgcala	ataattgagct	ttgggagctg	360
atatnlgagc	ggaugantag	cctttctact	lcaccagaca	caactccttt	catattggga	420
tgttnacnaa	agllctgtct	cttaccagag	ggatgcttct	gtggcaattc	tg	472

&lt;210&gt; 87

&lt;211&gt; 413

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; {1}...{413}

&lt;223&gt; n = A, T, C or G

&lt;400&gt; 87

agaaaccagt	atctctnaaa	acnacctctc	ataccttgag	gacchatttt	tgtgtgcgtg	60
tgtgtgtgog	cgcataattat	atagacgggc	acatcttttt	tacttttgta	aaagcttatg	120
ccctctttggt	atctatatct	gtgaaaqttt	taattgatctg	ccataatgtc	ttggggacct	180
ttgtcttctg	tgtaaatggt	actagagaaa	acacctatnt	tatgagtcaa	tctagttngt	240
tttattcgac	atgaaggaaa	tttccagatn	acacacttne	caaactctcc	cttgactagg	300
ggggacacaa	aaagacanaa	ctgaacatne	gaacacaattn	cctgggtgaga	aattncataa	360
acagaaalctg	ggtngtctat	tgaaanang	catcattnaa	acgttttttt	ttt	413

&lt;210&gt; 88

&lt;211&gt; 448

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; {1}...{448}

&lt;223&gt; n = A, T, C or G

<400> 88  
 cgcagcgggt cctctctatc tagctecagc ctctcgcttg cccactccc cgcgtccgc 60  
 gtccatagccn accatggcgc ggccctgag cgcctcgctg cctctgctgg ccactcctgg 120  
 cgtggccctg gccgtgagcc cgcggcccg gtccagtcgc ggcaagccgc cgcgcctgg 180  
 gggaggccca tggacccgc gtggaagaag aaggtgtgcg gcgtgcactg gactttgcg 240  
 tcggcnanta caacaaaccc gcaacnactt ttaccnagcn cgcgtgcag gttgtgcgc 300  
 cccaancaa ttgttactng gggttaantaa ttcttggaag ttgaacctgg gccaaacnng 360  
 ttaccagaa ccnagccaat tngaaccaat nccctccat aacagccct tttaaaagg 420  
 gaancantcc tgncttttc caaattt 448

<210> 89  
 <211> 463  
 <212> DNA  
 <213> Homo sapien  
 <220>  
 <221> misc\_feature  
 <222> (1)...(463)  
 <223> n = A,T,C or G

<400> 89  
 gaattttgtg cactggccac tgtgatggaa ccattgggcc aggatgcttt gattttatca 60  
 gtagtgattc tgcacaaagt ggtgttgtaa catgagtatg taaaatgtca aaaaattagc 120  
 agaggcttag gtctgcatac cagcagacag ttgtccgtg tattttgtag ccttgaagtt 180  
 ctcaagtaca agttnnttct gatgcgaagt cttnattcca gtgttttagt cctttgcac 240  
 tttnatgttn agacttgcc ctntnaaatt gottttgtnt totgcaggta ctatctgtg 300  
 tttacacaaa tagaannact tctctgcttn gaanatttga atatcttaca tctnaaaatn 360  
 aattctctcc ccatannaaa acccangccc ttggganaat ttgaaaaang gntccttccn 420  
 aattcnnana anttcagntc tcatccaca naacngganc ccc 463

<210> 90  
 <211> 400  
 <212> DNA  
 <213> Homo sapien  
 <220>  
 <221> misc\_feature  
 <222> (1)...(400)  
 <223> n = A,T,C or G

<400> 90  
 agggattgaa ggtctntnt actgtggac tgttcaccca ccaactctac aagttgctgt 60  
 ctccactca ctgtctgtaa gcntnttaac ccagactgta tottcataaa tagaacaaat 120  
 tottcaccag tcacatcttc taggaccttt ttggattcag ttagtataag ctcttccat 180  
 tctttgtla agacttcatc tggtaaagtc ttaagttttg tagaaaggaa ttaatttgc 240  
 cgttctctaa caatgctctc tcttgaagt atttggctga acaacccacc tnaagtcct 300  
 ttgtgcaccc attttaata tacttaata ggcattggtn cactaagtla aattctgca 360  
 gagtcatctg tctgcaaaag ttgcgttctg atctctgcca 400

<210> 91  
 <211> 480  
 <212> DNA  
 <213> Homo sapien  
 <220>  
 <221> misc\_featur  
 <222> (1)...(480)  
 <223> n = A,T,C or G

<400> 91  
 gagctcggat ccaataatct ttgtctgagg gcagcacaca tatncagtgc catgnaact 60

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ggctatcccc acatgggagc agcatgcggt agntatataa ggtoattccc tgagtuagac      120
atgcctcttt gactaccgtg tgccagtgtt ggtgattctc acacacctcc nncogctctt      180
tgtggaaaaa ctggcacttg nctggaaacta gcaagacatc acttacnaat tc cccacga      240
gacacttgaa aggtgtaaca aagcgactct tgcatfctt tttgtccctc cggcaccagt      300
tgtuaatact aaccogctgg tttgcctcca tcacatttgt gatctgtage telggaalaca      360
tctcctgaca gtaactgaaga acttctctct ttgtttcaaa agcaactctt ggtgcctgtt      420
ngatcaggtt cccatttccc agtcogaatg ttcacatggo atatnttact tccccaaaaa      480

```

```

<210> 92
<211> 477
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(477)
<223> n = A,T,C or G

```

```

<400> 92
atacagccca natccracca cgaagatgcg cttgttgact gagaacctga tgcgggtcact      60
ggteccgctg tagccccagc gactctccac ctgctggaag cggttgatgc tgcactcctt      120
cccacgcagg cagcagcggg gcoggtcaat gaactccact cgtggcttgg ggttgacggg      180
taantgcagg aagaggctga ccacctcgcg gtccaccagg atgcccgaact gtgcgggacc      240
tgcagcgaaa ctccctcgatg gtcattgagcg ggaagcgaat gangcccagg gccttgccca      300
gaaccttcog cctgtttctct gggttcacct gcagctgctg ccgctnacac tcggcctcgg      360
accagcggac aaacggcggt gaacagccgc acctcacgga tgcccantgt gtcgcgctcc      420
aggaacggcn ccagcgtgtc caggtcactg tcgggtgaanc ctccgcgggt aatggcg      477

```

```

<210> 93
<211> 377
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(377)
<223> n = A,T,C or G

```

```

<400> 93
gancggctgg accttgccctc gcattgtgtt gctggcagga ataccttggc aagugctcc      60
agtucgagca gccccagacc gctgcgcgcc gaagctaagg ctgcctcttg ccttccctc      120
cgctctaatg cagaaccant agtgggagca ctgtgtttag agliaaagt gaaactgtt      180
tgatttctact tgggaatttc ctctgttata tagcttttcc caatgctaat ttccaaacaa      240
caacaaacaa alaaccatgtt tgctgtttna gttglalaaa aglanglga telqlatnta      300
aagaaalal tactgttaca tatctgclt gcaanttrlg tatctatagg tncctctgga      360
ataaatatat tattaaa

```

```

<210> 94
<211> 495
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(495)
<223> n = A,T,C or G

```

```

<400> 94
ccctttgagg ggttagggtc cagttccagc tggaaagaa aggcaggag aantgcgtgc      60
cgagctgang cagatttccc acaatgaccc cagagccctg ggcctatagc tctgacucc      120
ccauggaug accaccttct ggggacatgg gctggagggc aggaacctaga ggcacccagg      180
gaaggcccca ttccqqnct gtcccccag gaggaaggga aggggctctg tctgaccccc      240

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acgaggaana	ggccctgant	cctgggatca	nacacccctt	cacgtgtctc	cccacacaaa	300
tgcagctca	ccaagggtccc	ctctcagter	cttccctaca	ccctgacgg	ncactggccc	360
acacccaacc	agahcancca	cccgccatgg	ggaatgtnet	caaggatcg	cnnggcaacg	420
tggactctng	lcccnnaagg	gggcagaatc	tccaatagan	gganngascc	cttgctnana	480
aaaaaaaaaa	aaaaa					495

<210> 95  
 <211> 472  
 <212> DNA  
 <213> Homo sapien  
  
 <220>  
 <221> misc\_feature  
 <222> (1)...(472)  
 <223> n = A,T,C or G

ggttacttgg	tttcattgcc	accacttagt	ggatgtcatt	tagaaccatt	ttgtctgctc	60
cctctggaag	ccttgcgcag	agcggacttt	gtaattgttg	gagaataaot	gctgaatttt	120
tagctgtttt	gagttgatto	gcaccuactgc	accacaactc	aatatgaaa	ctatttnact	180
tatttattat	cttgtagaaa	gtatacaatg	aaaattttgt	tcatactgtc	tttatcaagt	240
atgatgaaaa	gcaatagata	tatattcttt	tattatggtt	aattatgatl	gccattatta	300
atcgccaaaa	tgtggagtgt	atgttctttt	cacagtaata	tctgccittt	gtaccltcc	360
tkqgttattt	tatltgtaaa	gaattacaaa	attcttaatt	taagaaaatg	glangttata	420
tttatttcan	taatttcttt	ccttgtttac	gttaattttg	aaaagaatgc	at	472

<210> 96  
 <211> 476  
 <212> DNA  
 <213> Homo sapien  
  
 <220>  
 <221> misc\_feature  
 <222> (1)...(476)  
 <223> n = A,T,C or G

ctgaagcatt	tcttcaaat	tnictacttt	tgtcattgal	acclgtagta	agttqacaat	60
gtggtgaat	ttcaaaatla	tatgttaact	ctacclagltt	tactttctcc	cccaagtcct	120
ttttactcca	tgatltttac	acacacaactc	cagaacttat	tctatagcct	ctaagtccll	180
alicttcaca	gtagatgatg	aaagagtcct	ccagtgtctt	gngcanaatg	ttctagntat	240
agctggetac	atacngtggg	agttctataa	actcatacct	cagtgggact	naaccaaaat	300
tgtgttagtc	tcaattccta	ccacactgag	ggagcctccc	aaatcactat	attcttatct	360
gcaggtaact	ctccagaaaa	acngacaggg	caggcttgca	tgaaaaagtn	acatctgcgt	420
tacaaagtct	atcttctcca	nangtctgtn	aaggaacaat	ttaatcttct	agcttc	476

<210> 97  
 <211> 479  
 <212> DNA  
 <213> Homo sapien  
  
 <220>  
 <221> misc\_feature  
 <222> (1)...(479)  
 <223> n = A,T,C or G

actttttcta	atgctgatat	gatcttgagt	ataagaatgc	ataatgtcac	agaatggata	60
aaalaatgcl	gcaaaactta	tgttcttatg	caaataggaa	cgctaatgaa	acacagctta	120
caatcgcc	aa	tcaaaactca	caagtgtctc	tctgtgttag	atttagtgta	180
galltgctc	cttcggatat	gattgtttct	canatcttgg	gcaatnttcc	ttagtcaaat	240
caggctacta	gaattctggt	attggatatn	tgagagcatg	aaatttttaa	naatacactt	300

gtgattatna	aattaatcac	saattttcaat	tataacctgct	atcagcagct	agaaaaacat	360
ntnnnttttta	natcaaagta	ttttgtgttt	ggaantgttn	aatgaaate	tgaatgtggg	420
ttcnatctta	ttttttcccn	gacnactant	tnctttttta	gggnctcttc	tganccatc	479

<210> 98  
 <211> 461  
 <212> DNA  
 <213> Homo sapien

<400> 98						
agtgacttgt	cctccaacaa	aaccccttga	tcaagtttgt	ggcactgaca	atcagacctc	60
tgttagttcc	tgtcatctat	tgcctactaa	atgcagactg	gaggggacca	aaaaggggca	120
tcaactccag	ctggattatt	ttggagcctg	caaactctatt	cctacttgta	cggactttga	180
agtgattcag	tttctcttac	ggatgagaga	ctggctcaag	aatatcctca	tgcagcttta	240
tgaagccact	ctgaacacgc	tggttatcta	gatgagaaca	gagaaataaa	gtcagaaaat	300
ttacctggag	aaaagaggct	ttggctgggg	acctatcccat	tgaaccttct	cttaaggact	360
ttaagaaaaa	ctaccacatg	ttgtgtatcc	tgggtgcggc	cgtttatgaa	ctgaccaccc	420
tttggaaata	tcttgacgct	cctgaacttg	ctcctctgog	a		461

<210> 99  
 <211> 171  
 <212> DNA  
 <213> Homo sapien

<400> 99						
gtggcngggc	gcaggtgttt	cctcgtaacg	cagggccccc	tcccttcccc	aggcgtccct	60
cggcgctctc	ggggggccga	ggaggagcgg	ctggcgggtg	gggggagtgt	gaccacccct	120
cgggtgagaa	agccttctct	agcgatctga	gaggcgtgcc	ttgggggtac	c	171

<210> 100  
 <211> 269  
 <212> DNA  
 <213> Homo sapien

<400> 100						
cggccgcaag	tgcactcca	gttggggccg	tggggaagaa	gattctgcca	gcagttggtc	60
cgaactgagc	gacggcggcg	gcgacagtcg	cagggtgcgc	gcggggcgct	gggggtcttg	120
aaggctgagc	tgaacgncga	gaggctcgtgt	cangtccccc	gaccttgacg	ccgtcgggga	180
cagccgggac	agagcccggt	gaagcgggag	gcctcgggga	gccccctcgg	aaggggcgcc	240
cagagagatc	gcaggtgcag	gtggccgcgc				269

<210> 101  
 <211> 405  
 <212> DNA  
 <213> Homo sapien

<400> 101						
tttttttttt	ttttggaate	tactgcgagc	acagcaggtc	agcaacaaqt	ttattttgca	60
gctagcaagg	taacagggtg	gggcatgggt	acatgttcag	gtcaacttcc	tttqtctgtg	120
ttgattgggt	tgtttttatg	ggggcggggg	ggggcagggg	aaacgaagca	aataaacolg	180
agtgggtgca	ccclccctgt	agaaacclgg	tacaagcttc	ggagcagttc	acctggctcg	240
tgaacglocat	tttcttgaca	lcaalqllat	tagaagtcag	gatctctltt	agagagtcga	300
ctgttcttga	gggagattag	gggttctllgc	caaactccac	aaaatccact	gaaaaagttg	360
galqatcagc	acgaatcccg	aggcatattc	tcatatcggg	ggcca		405

<210> 102  
 <211> 470  
 <212> DNA  
 <213> Homo sapien

<400> 102						
tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	60

ggcacttaat	ccatttttat	ttcaaaatgt	ctacaaattt	aatccatta	tacgggtattt	120
tcaaaatcta	aattatttcaa	attagccaaa	tccttaccac	ataatacccc	aaaatcaaaa	180
atatacttct	ttcagcaaac	ttgtttacata	acttcaaaaa	atatatacgg	ctgggtgtttt	240
caaagtacaa	ttatcttaac	actgcaaaac	tttcaaggaa	ctaaaataaa	aaaaaacact	300
cgcgaagggt	taaagggaac	aacaaattct	tttcaaacac	cattataaaa	atcatatctc	360
aatctcttgg	ggaaatatata	cttcaacacg	gctcttaact	tttactcact	ttgtttattt	420
ttttaaacca	ttgttttggc	ccaaacacac	ggaalccccc	ctggactagt		470

<210> 103  
 <211> 581  
 <212> DNA  
 <213> Homo sapien

<400> 103						
tttttttttt	ttttttttga	ccccctcttt	ataaaaaaca	agttaccatt	ttatttttact	60
tacacatatt	tatttttata	ttgggtattag	atattcaaaa	ggcagctttt	aaaatcaaac	120
taaatggaaa	ctgcctcaga	tacataattc	ttaggaaatta	gcttaaaatc	tgcctaaagt	180
gaaaatcttc	tctagctctt	ttgaactgtaa	atttttgaact	cttgtaaaac	atccaaattc	240
attcttcttg	tctttaaaaa	tatctaattc	ttccattttt	tccttattcc	aagtcacttt	300
gcttctctag	cctcatcttc	tagctcttat	ctactattag	taagtggctt	tttloctaaa	360
agggaacaca	ggaagagaaa	tggaacacaa	aacaaacatt	ttatattcat	atttctacct	420
acgttaataa	aatagcattt	tgtgaagcca	gctcaaaaga	aggetttagt	ccttllalgt	480
ccatttttagt	cactaaacga	tatcaaatgt	ccagaaatgca	aaaggtllgt	gaacatttat	540
tcaaaagcta	atataagata	tttccacatac	tcacttllct	q		581

<210> 104  
 <211> 578  
 <212> DNA  
 <213> Homo sapien

<400> 104						
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ctcttatgct	atatcatatt	ttaagttaaa	ctaatgagtc	actggcttat	cttclclga	180
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gaggtttttc	ttctctatit	acacatatat	ttccatglga	atclqlatca	aacctttcatt	300
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caaaactgct	caaattgttt	gttaagttat	ccat,tatcat	tggttggcag	gagctaatac	420
aaatcacatt	tacgacagca	ataataaaac	lgaagtaacca	gttaaatatc	caaaataatt	480
aaaggaaacat	ttttagcctg	qqlataakta	gct,aattcac	tttacaagca	tttattagaa	540
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<210> 105  
 <211> 538  
 <212> DNA  
 <213> Homo sapien

<400> 105						
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gtcttgaaca	ccaatattaa	tttgaggaaa	atcacaccaa	alacalttaq	taattatttt	180
aagatcatag	agcttgtaag	tgaaaagata	aaalltgacc	tcagaaactc	tgagcattaa	240
aaatccacta	ttagcaaaata	aattactatg	gaattcttgc	tttaattttg	tgatgaatat	300
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tgtacttttg	taatacgtgg	atatgagttg	acaagtttct	ctttcttcaa	tcttttaagg	420
ggcgagaaat	gaggaaagaa	agaaaagqat	lccgcatact	gttctttcta	tggaaggatt	480
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<210> 106  
 <211> 473  
 <212> DNA  
 <213> Homo sapien



## &lt;400&gt; 106

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gcaaacgcta	attctctctt	ccatcccat	gtgatattgt	gtatatgtgt	gagttggtag	300
aatgcataca	aattctacat	caacaqcaag	atgaagctag	gctgggcttt	cggtgcaaat	360
agactgtgtc	tgltctgaac	aaatgatctg	acctatcctc	ggtggcaaga	actcttcgaa	420
ccgcttctct	aaagggcgctg	ccacahLigt	ggctctttgc	acttgcttca	aaa	473

## &lt;210&gt; 107

## &lt;211&gt; 1621

## &lt;212&gt; DNA

## &lt;213&gt; Homo sapien

## &lt;400&gt; 107

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aaaagtcacg	tgaacaaau	aaaaaaabaa	aaaaaaabaa	aaaaaaabaa	aaaaaaabaa	1620
						1621

## &lt;210&gt; 108

## &lt;211&gt; 382

## &lt;212&gt; PRT

## &lt;213&gt; Homo sapien

## &lt;400&gt; 108

Met	Ala	Leu	Gln	Gly	Ile	Ser	Val	Met	Glu	Leu	Ser	Gly	Leu	Ala	Pro
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Gly	Pro	Phe	Cys	Ala	Met	Val	Leu	Ala	Asp	Phe	Gly	Ala	Arg	Val	Val
			20					25					30		
Arg	Val	Asp	Arg	Pro	Gly	Ser	Arg	Tyr	Asp	Val	Ser	Arg	Leu	Gly	Arg
			35				40					45			
Gly	Lys	Arg	S	r	Leu	Val	Leu	Asp	Leu	Lys	Gln	Pro	Arg	Gly	Ala
	50					55						60			
Val	Leu	Arg	Arg	Leu	Cys	Lys	Arg	Ser	Asp	Val	Leu	Leu	Glu	Pro	Phe
65					70				75					80	

Arg	Arg	Gly	Val	Met	Glu	Lys	Leu	Gln	Leu	Gly	Pro	Glu	Ile	Leu	Gln
				85					90					95	
Arg	Glu	Asn	Pro	Arg	Leu	Ile	Tyr	Ala	Arg	Leu	Ser	Gly	Phe	Gly	Gln
			100					105					110		
Ser	Gly	Ser	Phe	Cys	Arg	Leu	Ala	Gly	His	Asp	Ile	Asn	Tyr	Leu	Ala
			115				120					125			
Leu	Ser	Gly	Val	Leu	Ser	Lys	Ile	Gly	Arg	Ser	Gly	Glu	Asn	Pro	Tyr
			130			135					140				
Ala	Pro	Leu	Asn	Leu	Leu	Ala	Asp	Phe	Ala	Gly	Gly	Gly	Leu	Met	Cys
			145			150				155				160	
Ala	Leu	Gly	Ile	Ile	Met	Ala	Leu	Phe	Asp	Arg	Thr	Arg	Thr	Asp	Lys
			165						170					175	
Gly	Gln	Val	Ile	Asp	Ala	Asn	Met	Val	Glu	Gly	Thr	Ala	Tyr	Leu	Ser
			180					185					190		
Ser	Phe	Leu	Trp	Lys	Thr	Gln	Lys	Ser	Ser	Leu	Trp	Glu	Ala	Pro	Arg
			195				200					205			
Gly	Gln	Asn	Met	Leu	Asp	Gly	Gly	Ala	Pro	Phe	Tyr	Thr	Thr	Tyr	Arg
			210			215					220				
Thr	Ala	Asp	Gly	Glu	Phe	Met	Ala	Val	Gly	Ala	Ile	Glu	Pro	Gln	Phe
			225			230				235					240
Tyr	Glu	Leu	Leu	Ile	Lys	Gly	Leu	Gly	Leu	Lys	Ser	Asp	Glu	Leu	Pro
			245					250						255	
Asn	Gln	Met	Ser	Met	Asp	Asp	Trp	Pro	Glu	Met	Lys	Lys	Lys	Phe	Ala
			260					265						270	
Asp	Val	Phe	Ala	Lys	Lys	Thr	Lys	Ala	Glu	Trp	Cys	Gln	Ile	Phe	Asp
			275				280					285			
Gly	Thr	Asp	Ala	Cys	Val	Thr	Pro	Val	Leu	Thr	Phe	Glu	Glu	Val	Val
			290			295					300				
His	His	Asp	His	Asn	Lys	Glu	Arg	Gly	Ser	Phe	Ile	Thr	Ser	Glu	Glu
			305		310				315					320	
Gln	Asp	Val	Ser	Pro	Arg	Pro	Ala	Pro	Leu	Leu	Leu	Asn	Thr	Pro	Ala
			325					330						335	
Ile	Pro	Ser	Phe	Lys	Arg	Asp	Pro	Phe	Ile	Gly	Glu	His	Thr	Glu	Glu
			340					345					350		
Ile	Leu	Glu	Glu	Phe	Gly	Phe	Ser	Arg	Glu	Glu	Ile	Tyr	Gln	Leu	Asn
			355			360					365				
Ser	Asp	Lys	Ile	Ile	Glu	Ser	Asn	Lys	Val	Lys	Ala	Ser	Leu		
			370			375					380				

<210> 109  
 <211> 1524  
 <212> DNA  
 <213> Homo sapien

<400> 109  
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 gggttgtaac acctgggccc caatgtcttc tgcctcgact tcatgggttt caccgtgccc 240  
 ctgttcacaa tcttcacggg caacaaacag ctggggccca agatcgctcat cgtgagcaag 300  
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 gtggccacgg aggggctcct gaggccacgg gacagtgcg tcccaagtat cctgcgcgcg 420  
 gtcttctacc gtccctacct gcagatcttc gggcagattc cccaggagga catggacgtg 480  
 gccctcatgg agcacagcaa ctgctcgctg gagcccggtt tctgggcaca cctcctggg 540  
 gccagggcgg gcacctgctt ctcccagtat gccaaactggc tgggtggtgct gctcctcgte 600  
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cgcgagtagc	aacagcgcc	gaaggtgctg	gaagcgagg	tccagcagt	tagccgcgtc	1080
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<210> 110  
 <211> 3410  
 <212> DNA  
 <213> Homo sapien

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<210> 111  
 <211> 1289  
 <212> DNA  
 <213> Homo sapien

<400> 111	
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tcaataaagt	ccacttctgc
accctggcaa	gcagcagtg
gaatggacct	gccctttctg
atgcctgact	ttccttccat
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aagtgaatc	agcagagcct
tggtacaatg	ttaaaaaaa
gcccactcag	ttgcaacacc
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gtggcttcc	cttccnatt
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ctaatgcagt	tgattgtgtc
actgctgcca	catggtgcca
ggacaggatc	ggggtctagt
ggggtctagt	atgggtgggg
atgggtgggg	ctattaaacc
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tgcataaac	

<210> 112  
 <211> 315  
 <212> PRT  
 <213> Homo sapien

<400> 112	
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Phe Phe Leu Phe Phe Leu Gly Val Trp Leu Val Ala Tyr Gly Val Ala	
35 40 45	
Thr Glu Gly Leu Leu Arg Pro Arg Asp Ser Asp Phe Pro Ser Ile Leu	
50 55 60	
Arg Arg Val Phe Tyr Arg Pro Tyr Leu Gln Ile Phe Gly Gln Ile Pro	
65 70 75 80	
Gln Glu Asp Met Asp Val Ala Leu Met Glu His Ser Asn Cys Ser Ser	
85 90 95	
Glu Pro Gly Phe Trp Ala His Pro Pro Gly Ala Gln Ala Gly Thr Cys	
100 105 110	
Val S r Gln Tyr Ala Asn Trp Leu Val Val Leu Leu Leu Val Ile Phe	



Cys Cys Pro Cys Arg Ala Arg Leu Ala Phe Arg Asn Leu Gly Ala L u  
 245 250 255  
 Leu Pro Arg Leu His Gln Leu Cys Cys Arg Met Pro Arg Thr Leu Arg  
 260 265 270  
 Arg Leu Phe Val Ala Glu Leu Cys Ser Trp Met Ala Leu Met Thr Phe  
 275 280 285  
 Thr Leu Phe Tyr Thr Asp Phe Val Gly Glu Gly Leu Tyr Gln Gly Val  
 290 295 300  
 Pro Arg Ala Glu Pro Gly Thr Glu Ala Arg Arg His Tyr Asp Glu Gly  
 305 310 315 320  
 Val Arg Met Gly Ser Leu Gly Leu Phe Leu Gln Cys Ala Ile Ser Leu  
 325 330 335  
 Val Phe Ser Leu Val Met Asp Arg Leu Val Gln Arg Phe Gly Thr Arg  
 340 345 350  
 Ala Val Tyr Leu Ala Ser Val Ala Ala Phe Pro Val Ala Ala Gly Ala  
 355 360 365  
 Thr Cys Leu Ser His Ser Val Ala Val Val Thr Ala Ser Ala Ala Leu  
 370 375 380  
 Thr Gly Phe Thr Phe Ser Ala Leu Gln Ile Leu Pro Tyr Thr Leu Ala  
 385 390 395 400  
 Ser Leu Tyr His Arg Glu Lys Gln Val Phe Leu Pro Lys Tyr Arg Gly  
 405 410 415  
 Asp Thr Gly Gly Ala Ser Ser Glu Asp Ser Leu Met Thr Ser Phe Leu  
 420 425 430  
 Pro Gly Pro Lys Pro Gly Ala Pro Phe Pro Asn Gly His Val Gly Ala  
 435 440 445  
 Gly Gly Ser Gly Leu Leu Pro Pro Pro Ala Leu Cys Gly Ala Ser  
 450 455 460  
 Ala Cys Asp Val Ser Val Arg Val Val Val Gly Glu Pro Thr Glu Ala  
 465 470 475 480  
 Arg Val Val Pro Gly Arg Gly Ile Cys Leu Asp Leu Ala Ile Leu Asp  
 485 490 495  
 Ser Ala Phe Leu Leu Ser Gln Val Ala Pro Ser Leu Phe Met Gly Ser  
 500 505 510  
 Ile Val Gln Leu Ser Gln Ser Val Thr Ala Tyr Met Val Ser Ala Ala  
 515 520 525  
 Gly Leu Gly Leu Val Ala Ile Tyr Phe Ala Thr Gln Val Val Phe Asp  
 530 535 540  
 Lys Ser Asp Leu Ala Lys Tyr Ser Ala  
 545 550

<210> 114  
 <211> 241  
 <212> PRT  
 <213> Homo sapien

<400> 114  
 Met Gln Cys Phe Ser Phe Ile Lys Thr Met Met Ile Leu Phe Asn Leu  
 1 5 10 15  
 Leu Ile Phe Leu Cys Gly Ala Ala Leu Ala Val Gly Ile Trp Val  
 20 25 30  
 Ser Ile Asp Gly Ala Ser Phe Leu Lys Ile Phe Gly Pro Leu Ser Ser  
 35 40 45  
 Ser Ala Met Gln Phe Val Asn Val Gly Tyr Phe Leu Ile Ala Ala Gly  
 50 55 60  
 Val Val Val Phe Ala Leu Gly Phe Leu Gly Cys Tyr Gly Ala Lys Thr  
 65 70 75 80  
 Glu Ser Lys Cys Ala Leu Val Thr Ph Ph Phe Ile Leu Leu Leu Ile  
 85 90 95  
 Phe Ile Ala Glu Val Ala Ala Ala Val Val Ala Leu Val Tyr Thr Thr  
 100 105 110  
 Met Ala Glu His Phe Leu Thr Leu Leu Val Val Pro Ala Ile Lys Lys

	115		120		125										
Asp	Tyr	Gly	Ser	Gln	Glu	Asp	Phe	Thr	Gln	Val	Trp	Asn	Thr	Thr	Met
	130					135					140				
Lys	Gly	Leu	Lys	Cys	Cys	Gly	Phe	Thr	Asn	Tyr	Thr	Asp	Phe	Glu	Asp
145				150						155					160
Ser	Pro	Tyr	Phe	Lys	Glu	Asn	Ser	Ala	Phe	Pro	Pro	Phe	Cys	Cys	Asn
			165						170					175	
Asp	Asn	Val	Thr	Asn	Thr	Ala	Asn	Glu	Thr	Cys	Thr	Lys	Gln	Lys	Ala
		180						185					190		
His	Asp	Gln	Lys	Val	Glu	Gly	Cys	Phe	Asn	Gln	Leu	Leu	Tyr	Asp	Ile
	195						200					205			
Arg	Thr	Asn	Ala	Val	Thr	Val	Gly	Gly	Val	Ala	Ala	Gly	Ile	Gly	Gly
	210					215					220				
Leu	Glu	Leu	Ala	Ala	Met	Ile	Val	Ser	Met	Tyr	Leu	Tyr	Cys	Asn	Leu
225				230						235					240
Gln															

<210> 115  
 <211> 366  
 <212> DNA  
 <213> Homo sapien

<400> 115  
 gctcttctc tccctctct tgaatttaac tctttcaact tgcatttgc aaggattaca 60  
 catttcaactg tgatgtatat tgtgttgcaa aaaaaaaas gtgtctttgt ttaaaattac 120  
 ttggtttgtg aatccatctt gctttttccc cattgggaact agtcattac ccctctctga 180  
 actggtagaa aaacatctga agagctagtc tatcagcacc tgacaggtga attggatggt 240  
 tctcagacc atttcacca gacagcctgt ttctatctct tttantaaat tagtttgggt 300  
 tctctacatg cttacaaac cctgtctcaa tctgtcaaat aaaaqtctgt gacllgaaat 360  
 ttagtc 366

<210> 116  
 <211> 282  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(282)  
 <223> n = A,T,C or G

<400> 116  
 acaaagatga accatttctt atattatagc aaaattaaaa tctaccgta ttctaatttt 60  
 gagaaatgag atnaaacaca atnttataaa gtctacttag agaagatcaa gtgacctcaa 120  
 agactttact attttcatat ttttaagacac atgatttatc ctatttttagt aacctggttc 180  
 atacgtttaa caaaggataa tctgaacagc agagaaggatt tgttagcaga aatctctgt 240  
 tcaatctngs acletctana tcacagaunt ttctattcct ct 282

<210> 117  
 <211> 305  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(305)  
 <223> n = A,T,C or G

<400> 117  
 acacatgtcg cttcactgcc ttcttagatg cttctgggtca acatanagga acagygacca 60  
 tatttatcct cctctctgaa scaattgcaa aataanacaa aatattatgaa acaattgcaa 120

42

```

aataaggcaa aatatatgaa acascaggto tggagatatt ggaaatcagt cagtgaaggga      180
tactgatccc tgatcaactgt cctaattgcag gatgtgggaa acagatgagg tcacctctgt      240
gactgcccca gcttactgcc tgtagagagt ttctangctg cagttcagac agggagaaat      300
tgggt                                           305

```

```

<210> 118
<211> 71
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(71)
<223> n = A,T,C or G

```

```

<400> 118
accaggtgt ntgaatctct gscgtgggga tctctgattc ccgcacaatc tgagtggaaa      60
aantctggg t.                                           71

```

```

<210> 119
<211> 212
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(212)
<223> n = A,T,C or G

```

```

<400> 119
ectcggllg gtgtcagcag cagctggcat tgaacatngc aatgtggagc ccaaaccaca      60
gaaatgggg tgaaattggc caactttcta tnaacttatg ttggcaantt tgccaccaac      120
agtaagctgg cctttcta ataaagaaaat tgaaggttt ctoactaanc ggaattaant      180
aatggantca aganactccc aggcctcagc gt                                           212

```

```

<210> 120
<211> 90
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(90)
<223> n = A,T,C or G

```

```

<400> 120
actngttgca natcaggggc cccccagagt caccgttgca ggagtccttc tggctttgcc      60
ctccgcgggc gcagaacatg ctggggtggt                                           90

```

```

<210> 121
<211> 218
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(218)
<223> n = A,T,C or G

```

```

<400> 121
tgtangctga anaagacaga nagggtgtgc aaaaatggag aanccttqua gtcatttlga      60
gaataagatt tgctaagaga ttgggggcta aaacatgggt attggagagac attcttgaaq      120

```



atatncangt aaattangga atgaattcat gggtctttttg ggaatttcctt tccgatngcc 100  
agcatanaact tcatgtgggg atancagcta cccttgta 210

<210> 122  
<211> 171  
<212> DNA  
<213> Homo sapien

<400> 122  
tggggglgta tgcacactgta aggcacaaaa ttgagactca actggcttaa ccaataaagg 60  
catttggttg ctccttggaac aggaagtcgg atgggtggggc atcttcagtg ctgcatgagt 120  
caccaccccg qcggggtcat ctgtgccaca ggctccctgtt gacagtcgg t 171

<210> 123  
<211> 76  
<212> DNA  
<213> Homo sapien

<220>  
<221> misc feature  
<222> (1)..(76)  
<223> n = A,T,C or G

<400> 123  
tgtagcgtga agacnacaga atgggtgtgtg ctglqctato caggaaacaca tttatlatra 60  
ttatcaanta ttgtgt 76

<210> 124  
<211> 131  
<212> DNA  
<213> Homo sapien

<400> 124  
acctttcccc aaggccaatg tccctgtgtg taactggccg gctgcaggac agctgcaatt 60  
caatgtgctg ggtcatatgg aggggaggag actctaaaaat agccaatttt attctcttgg 120  
ttaagatttg t 131

<210> 125  
<211> 432  
<212> DNA  
<213> Homo sapien

<400> 125  
acttatacta ctggctatga aatagatggg ggaaaattgc gttaccaact ataccactgg 60  
cttgaanaag aggtgatagc tcttcagagg acttctgact tttgtcaga tgctgaagaa 120  
ctacagctctg catttggcag aaatgaagat gaatttggat taaatgagga tgctgaagat 180  
ttgcctcanc aaacaaaagt gaaacaaact agagaaaatt ttcaggaaaa aagacagtgg 240  
ctcttgaagt atcagtcact tttgagaatg tttcttagtt actgcatact tcatggatoc 300  
catgggtggg gtcttgcatc tgtaagaatg gaattgattt tgccttttgc agaattctcag 360  
caggaaacat cagaaccact attttctago cctctgtcag agcaaacctc agtgcctctc 420  
ctctttgctt gt 432

<210> 126  
<211> 112  
<212> DNA  
<213> Homo sapien

<400> 126  
acacaacttg atagtaaaa tagaaacLga gctgaaaLlt claatccact LLctaaccct 60  
agtaagaatg atatttcccc ccagggtcca ccaaatattt aLaaaaattt gt 112

<210> 127

<211> 54  
 <212> DNA  
 <213> Homo sapien

<400> 127  
 accacgaaac cacaaacaaag atggaagcat caatccactt gccaaagcaca gcag 54

<210> 128  
 <211> 323  
 <212> DNA  
 <213> Homo sapien

<400> 128  
 acctcattag taattgtttt gttgtttcat ttttttctaa tgtctccct ctaccagctc 60  
 acctgagata acagaatgaa aatggaagga cagccagatt tctcctttgc tctctgtca 120  
 ttctctctga agtctagggt acccattttg gggacccatt ataggcaata aacacagttc 180  
 ccaaagcatt tggacagttt cttgtttgtt tttagaatgg ttttcccttt tcttagcctt 240  
 ttctctgcaaa aggcctcctc agtcccttgc ttgtctagtg gaactgggctc cccagggcct 300  
 aggotgcctt cttttccatg tcc 323

<210> 129  
 <211> 192  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(192)  
 <223> n = A,T,C or G

<400> 129  
 acatacatgt gtgtatattt ttaaatatca cttttgtatc actctgactt tttagcatac 60  
 tgaaaacaca ctaacataat ttntgtgaa cagtatcaga tacaacccaa atcattcaco 120  
 tagcacattc atctgtgata naaagatagg tgagtttcat ttctctcag ttggccaatg 180  
 gataaacaaa gt 192

<210> 130  
 <211> 362  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(362)  
 <223> n = A,T,C or G

<400> 130  
 ccttttctta tggaaatgagt agactgtatg tttgaanatt tanccacaac ctctttgaca 60  
 tataatgacg caacaaaaag gtgtgtttta gtccctatgg tcagtttatg cccctgacaa 120  
 gtttccattg tgtttttgacg atcttctgac taatcgtgg atcctccatg ttattagtaa 180  
 ttctgtattc cattttgtta acgoclggt gatetaacct gctangagg taactttata 240  
 cttattttaa agctcttatt ttgtggctca taaaatggca atttatgtgc agcactttat 300  
 tguagcagga agcgcgtgtg aggttggctgt aagctctctt gclaatctta aaaaagtaatg 360  
 gg 362

<210> 131  
 <211> 332  
 <212> DNA  
 <213> Homo sapi n

<220>  
 <221> misc\_f ature

<222> {1}...{332}  
 <223> n = A, T, C or G

<400> 131  
 ctttttgaaa gatcgtgtcc actcctgtgg acatcttgtt ttaatggagt ttcccatgca 60  
 gtangactgg tatggttgca gctgtccaga taaaaacatt tgaagagctc caaaatgaga 120  
 gttctccag gttcgccctg ctgctccaag tctcagcage agcctctttt aggaggcatc 180  
 ttctgaacta gattaaggca gcttgtaaat ctgatgtgat ttggtttatt atccaactaa 240  
 cttccatctg ttatcactgg agaaagccca gactcccan gaonggtacg gattgtgggc 300  
 atanaaggat tgggtgaagc tggcgttgtg gt 332

<210> 132  
 <211> 322  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> {1}...{322}  
 <223> n = A, T, C or G

<400> 132  
 atttttgcca ttttgtalat ataaccatc ttgggacatt ctcttgaaaa ctagggtgtcc 60  
 agtggctaaq agaacctcgt ttcaagccat tctgaaggga aaaccagcat gacacagaat 120  
 ctcaaatcc caaacagggg ctctgtggga aaatgaagg aggaaccttg tatctcgggt 180  
 ttagcaagt taasatgaan atgacaggaa aggccttatt atcaacaaag agaagagttg 240  
 ggatgcttct aaaaaaact ttggtagaga aaataggaat gctnaatcct aggggaagcct 300  
 gtaacaatct acaattggtc ca 322

<210> 133  
 <211> 278  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> {1}...{278}  
 <223> n = A, T, C or G

<400> 133  
 acaagccttc acaagtttaa ctaaattggg attaatcttt ctgtanttat ctgcataatt 60  
 cttgtttttc ttccatctg gctcctgggt tgacaatttg tggaaacaac tctattgcta 120  
 ctatttaaaa aaatcacaa atctttccct ttaagctatg ttnaattcaa actattcctg 180  
 ctattcctgt ttgtcaaaq aaatttatatt ttcaaaaata tgtntatttg ttgatgggt 240  
 cccacgaazc actaataaaa accacagaga ccagcctg 278

<210> 134  
 <211> 121  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> {1}...{121}  
 <223> n = A, T, C or G

<400> 134  
 gtttananaa cttgttttagc tccatagagg aaagaatgtt aaactttgta ttttaaaaca 60  
 tgattctctg aggttaaact tggttttcaa atgttatitt tacttgtatt ttgcttttgg 120  
 c 121

<210> 135

46

<211> 350  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(350)  
 <223> n = A,T,C or G

<400> 135  
 acttanaacc atgcctagca catcagaatc cctcaaagaa catcagtata atcctataacc 60  
 atancaagtg gtgactggtt aagcgtgcga caaaggtcag ctggcacatt acttgtgtgc 120  
 aactttgata cttttgttct aagtaggaac tagtatacag tncctaggan tggtaactcca 180  
 ggggtgcccc caactcctgc agccgctcct ctgtgccagn ccctgnaagg aactttcgtc 240  
 ccacctcaat caagccctgg gccatgctac ctgcaattgg ctgaacaaac gtttgetgag 300  
 ttccccagga tgcaagcct ggtgctcaac tectgggycg tcaactcagt 350

<210> 136  
 <211> 399  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(399)  
 <223> n = A,T,C or G

<400> 136  
 tgtaccgtga agacgacaga agttgcatgg cagggacagg gcagggcoga ggccagggtt 60  
 gctgtgattg tatccgaata ntctcgtga gaaaagataa tgagatgacg tgaacagcct 120  
 gcagacttgt gtctgccttc aanaagccag acaggagggc cctgcctgcc ttggctctga 180  
 cctggcggcc agccagccag ccacagggtg gcttctloct ttatgtgtga caacnccaa 240  
 aaaaactgcag agggccaggg tcagggtgna gtgggtangt gaccalaaaa caccagggtg 300  
 tcccaggaa cccggcaaaq qccatcccc cctcacgcca gcattgcccc tggcgtgatg 360  
 gctgcagang galqaagcag ccagntgttc tgcLqfsgt 399

<210> 137  
 <211> 165  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(165)  
 <223> n = A,T,C or G

<400> 137  
 actggtgtgg tngggggtga tgctggtggt anaaqttcan gtgacttcan galgggtgtg 60  
 ggaggaggtg tgtgaacgta gggatqtaga ngttttgcc gtgcLaaatg agcttcggga 120  
 ttggctggtc ccactgqlqg tuactgtcat tggtaggglt cctgt. 165

<210> 138  
 <211> 338  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(338)  
 <223> n = A,T,C or G

<400> 138

actcactgga	atgccacatt	cacaaacagaa	tcagagggtct	gtgaaaacat	taatggctcc	60
ttaaacttctc	cagtaagaat	cagggaacttg	aaatggaaac	gttaacagcc	acatgcccaa	120
tgctgggcag	tctccatgc	cttccacagt	gaaggggctt	gagaaaaatc	acatccaatg	180
tcattgtgtt	ccagccacac	caaaagggtgc	ttgggggtgga	gggctggggg	catananggt	240
cangcctcag	gaagcctcaa	gttccattca	gctttgcvac	tgtacattcc	ccatntttas	300
aaaaactgat	gccttttttt	tttttttttg	taaaalle			338

<210> 139  
 <211> 382  
 <212> DNA  
 <213> Homo sapien

gggaattcttg	gtttttggca	tctgggttgc	ctatagccga	ggccactttg	acagaacaaa	60
gaaagggact	tcagqlaaga	aggtgattta	cagccagcct	agtgcccgaa	gtgaaggaga	120
attcaaacag	acctcgtcat	tctgggtgtg	agcctggctg	gctcaccgcc	tatcatctgc	180
atttgcttta	ctcaggagct	acgggactct	ggccctctgat	gtctgtagtt	tcacaggatg	240
ccttatllgt	cttctacccc	ccacaggggcc	ccctacttct	tcggatgtgt	ttttaataat	300
gtcagctatg	tgcacctcc	tcttcatgc	cctccctccc	tttccatacca	ctgctgagtg	360
gcctgggaact	tgtttaaaagt	gt				382

<210> 140  
 <211> 200  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...[200]  
 <223> n = A,T,C or G

accaaanctt	ctttctggtg	tggtngattt	tactataggg	gtttngcttn	ttctaaanat	60
acttttccct	taacancttt	tgtaaagtgt	caggctgcac	tttgctccat	anaattattg	120
ttttcacatt	tcaacttgta	tgtgtttgtc	tcttanagca	ttggtgaat	ccatattttt	180
atattcagca	taaaggagaa					200

<210> 141  
 <211> 335  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(335)  
 <223> n = A,T,C or G

actllatitt	caaaacactc	atatgttgca	aaaaacacat	agaaaaataa	agtttggttg	60
gggtgctgac	taaacttcaa	gtcacagact	tttatgtgac	agattggagc	agggtttgtt	120
atgcatgtag	agaacccaaa	ctaatttatt	aaacaggata	gaaacaggct	gtctgggtga	180
aatggttctg	agaacctcc	aattcacctg	tcagatgctg	atanactago	tcttcagatg	240
tttttctacc	agttcagaga	tnngttaatg	actanttcca	atggggaaaa	agcaagatgg	300
attcacaaac	caagtaattt	taaacaaaga	cactt			335

<210> 142  
 <211> 459  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_f ature

&lt;222&gt; {1}...{459}

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 142

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accagggttaa tattgccaca tatatccttt ccaattgcgg gctaaacaga cgtgtattta      60
gggttggtta aagacaaccc agcttaatat caagagaaat tgtgaccttt catggagtat      120
ctgatggaga aaacactgag ttttgacaaa tottatctta ttcagatagc agtctgatac      180
cacatgggtc aacaacactc aaataataaa tcaaataatna tcagatgtta aagattgggtc      240
ttcaaacatc atagccaatg atgcccgcgt tgcctataat ctctccgaca taataaccaca      300
tcaaacacctc agtggccacc aaaccattca gcacagcttc cttaactgtg agctgtttga      360
agctaccagt ctgagcacta ttgactatnt ttttcangct ctgaatagct ctagggatct      420
cagcanggggt gggagggaacc agtccaacct tggcgtant                                459

```

&lt;210&gt; 143

&lt;211&gt; 140

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 143

```

acatttcctt ccaccaagtc aggaactcctg gcttctgtgg gagttcttat cacctgaggg      60
aaatccaaac agtctctctc agaaagggaat agtgtcacca accccaccca tctccctgag      120
accctccgac ttccctgtgt                                140

```

&lt;210&gt; 144

&lt;211&gt; 164

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; {1}...{164}

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 144

```

acttcagtaa caacatocaa taacaacatt aagtgtatat tgccatcttt gtcattttct      60
atctatacca ctctcccttc tgaaascaan atcactanc caatcactta tacaatttgg      120
aggcaattta tccatatttg ttttcaataa ggaaaaaaag atgt                                164

```

&lt;210&gt; 145

&lt;211&gt; 303

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; {1}...{303}

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 145

```

acgtagacca tccaactttg catttgtaat ggcaaacatc cagnagcaat tccataacaa      60
actggagggt atttatcccc aattatccca ttcatlaaca tgccctcttc ctcaaggctat      120
gcaggccagc tctcatcaat cggccacaggc atccagatac taccatttgt ataacttca      180
gtaggqqagc ccatccaaat gacaggtcta atcaaaggag gaatatggaac ataagcccag      240
tagtcaaatn tlqcttagct gaascagcca caaagactt accgccgtgg tgattancat      300
caa                                                303

```

&lt;210&gt; 146

&lt;211&gt; 327

&lt;212&gt; DNA

&lt;213&gt; Homo sapi n

&lt;220&gt;

<221> misc\_feature  
 <222> (1)...(327)  
 <223> n = A,T,C or G

<400> 146  
 actgagctc aattagaagt ggtctctgac ttctcatcanc ttctccctgg gctccatgac 60  
 actggcctgg agtgactcat tgctctgggt ggttgagaga gctcccttgc caacaggcct 120  
 ccaagtcagg gctgggattt gtttcccttc cacattctag caacaatatg ctggccactt 180  
 cctgaacagg gagggctggg gagagccagca tggacaagc tgccactttc taaagtatgc 240  
 agacttgccc ctgggcctgt cacacctact gatgaccttc tgtgcctgca ggatggaatg 300  
 taggggtgag ctgtgtgact ctatggt 327

<210> 147  
 <211> 173  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(173)  
 <223> n = A,T,C or G

<400> 147  
 acattgtttt tttagataaa agcattgana gagctctcct taacgtgaca caatggaagg 60  
 actggaacac ataccacat ctttgttctg agggataatt ttctgataaa gtcttgctgt 120  
 atattcaagc acatatgtta tatattattc agttccatgt ttatagccta gtt 173

<210> 148  
 <211> 477  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(477)  
 <223> n = A,T,C or G

<400> 148  
 acaaccactt tatctcatog aatttttaac ccaaactcac tcaactgtgc tttctatcct 60  
 atgggatata ttatttgatg ctccatttca tcacacatat atgaataata cactcatact 120  
 gccctactac ctgctgcaat aatcacattc ccttctgtgc ctgaccctga agccattggg 180  
 gtggctctag tggccatcag tccangcctg caccttgagc ccttgagctc cattgctcac 240  
 nccancccac ctcaaccgac ccatcctctt acacagctac ctcttgctc tctaacccca 300  
 tagattatnt cczattcaq tcaattcaq tactattaac actctaccg acatgtccag 360  
 caccactggg aagccttctc cagccaaacac acacacacac acacncuac acacacatat 420  
 ccaggcacag gttacclcal ctccacaatc acccctttaa ttacuatgcl atggtgg 477

<210> 149  
 <211> 207  
 <212> DNA  
 <213> Homo sapien

<400> 149  
 Acagttgtat tataatatca agaaataaac ttgcaatgag agcatttaag agggagaagac 60  
 taacgtatct tagagagcaa aggaagggtt ctgtggggag tgggatgtaa ggtggggcct 120  
 gatgataaat aagagtcagc caggtaagtg ggtgggtgtg tatgggcaca gtgaagaaca 180  
 ttccaggcag agggaaacagc agtgaaa 207

<210> 150  
 <211> 111  
 <212> DNA  
 <213> Homo sapien

50

<220>  
 <221> misc\_feature  
 <222> (1)...(111)  
 <223> n = A,T,C or G

<400> 150  
 accttgatctt catttgcctgc clgatggaaa cccaactatc taatttagct aaaacatggg 60  
 cacttaaatg tggkcaagtgt ttggacttgt taactantgg catctttggg t 111

<210> 151  
 <211> 196  
 <212> DNA  
 <213> Homo sapien

<400> 151  
 agcgcggcag gtcatattga acattccaga tacctatcat tactcgatgc tgttgataac 60  
 agcaagatgg ctttgaactc agggtcacca ccagctattg gaccttacta tgaaaaccat 120  
 ggataccaac cggaaaaccc ctatcccgca cagcccactg tggccccac tgtctacgaq 180  
 gtgcacccgg ctacgt 196

<210> 152  
 <211> 132  
 <212> DNA  
 <213> Homo sapien

<400> 152  
 acaqcauttt cacatgcag aagggagaaa ttccataatg taggagaaa ataacagaac 60  
 cttccccctt tcaatcagtg gtggaaacct gatgctttat gtgacagga atagaaccag 120  
 gaggagttt gt 132

<210> 153  
 <211> 285  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(285)  
 <223> n = A,T,C or G

<400> 153  
 acaanaccca naganaggca ctggccgtgg tgtcatggcc tccaaacatg aaagtgtcag 60  
 ctltctgctct tatgtccctca tctgacaact ctttaccatt tttatcctcg ctacgcagga 120  
 gcacatcaat aaagtccaaa gtcttggact tggccttggc ttggaggaag tcatcaacac 180  
 cctggctagt gagggtgagg cgcgcctcct ggatgaaggc atctgtgaag tctgcacca 240  
 gtctgcaggc cctgtggaag cgcgctccac acggagtnag gaatt. 285

<210> 154  
 <211> 333  
 <212> DNA  
 <213> Homo sapien

<400> 154  
 accacagtc tgttggggca gggcttcatg accctttctg tggaaagcca tattalocac 60  
 accccaaatt ttcccttana tatcttlaac tgaaggggtc agcctctga clqcaagac 120  
 cctaagccgg ttacacagct aectccact ggcctgctt tctgaaattg ctgctgctt 180  
 attggcacag gagtccagg tcltcaact cctcctcct tggaaacgaga ctctgattt 240  
 agtttcacaa attctcgggc cactctgtca tctctcctt gasataaaat ccggagaatg 300  
 gtcaggcctg tctcatcat alggatctt cgg 333

<210> 155



51

<211> 308  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc feature  
 <222> (1)...(308)  
 <223> n = A,T,C or G

<400> 155  
 actggaaala ataaaaccca catcacagtg ttgtgtcaaa gatcatcagg gcatggatgg 60  
 gaaagtgtgt tgggaactgl aaagtgccta acacatgac gatgattttt gttataatat 120  
 tlgaaacag gtgcatacaa actctcctgc ctgctcctcc tgggccccag cccagcccc 180  
 atcacagctc actgcctgtg tcatccaggc ccagcatgta gtggctgatt cttcttggct 240  
 gcttttagcc tccaaaggtt tctctgaagc caaccaaacc totangtgta aggcattgctg 300  
 ggcctggt 308

<210> 156  
 <211> 295  
 <212> DNA  
 <213> Homo sapien

<400> 156  
 acctgtctcg gtgcttggaa catattagga actcaaaata tgagatgata acagtgccca 60  
 ttattgatta ctgagagaac tgttagacat ttagttagag allttclaca cagggaactga 120  
 gaataggaga ttatgttttg ccctcatatt ctctccatcc ctcccttggct cttcttatgt 180  
 ctaatafatc ctcaatcaaa taaggcttagc ataatcagga aatcgaccaa ataccaatat 240  
 aaaaccagat gtctatcctt aaqattttcc aatcgaaaac aaattaacag actat 295

<210> 157  
 <211> 126  
 <212> DNA  
 <213> Homo sapien

<400> 157  
 acaagtttaa atagtgtgt catgtgtcat gtgctgaaat gtgaaatcca ccacatttcl 60  
 gaagagcaaa acaattctg tcatgtaatc totatcttgg gtcgtggtga tctctgtccc 120  
 cttagt 126

<210> 158  
 <211> 442  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc feature  
 <222> (1)...(442)  
 <223> n = A,T,C or G

<400> 158  
 acccactggt cttagaaca cccatcctta atacgatgat tttctgtcg tgtqaaaatg 60  
 aancagcag gctgcacctg gtcagtccct ccttccagag aaaaagagat ttgagaaagt 120  
 gcttggttaa ttcaacatta atttccctcc ccacacctcc ttagtcttcc cttaatatatt 180  
 ctggttggtc tgaccaaagc aggtcatggt ttgtttagaa tllgggatac cagtgaaagc 240  
 natgtttgta gccttgcata cttagucctt cccacgcaca aacggagtg caggttggtg 300  
 ccaacccctg ttccccagtc cactgagaca gattcaccag gcaggatctt ggaagcttga 360  
 nacagacggg ctctttgagc agccgggact ctgagangga catgaggggc tctgctctg 420  
 tttcattct ctgctgtcct gt 442

<210> 159  
 <211> 498  
 <212> DNA

52

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(498)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 159

acttccaggc	aacgttggtg	tttccgttga	gcctgaactg	atgggtgacg	ttgtaggttc	60
tccaacaaga	actgaggttg	cagagcggtg	aggggaagag	gctgttccag	ttgcacctgg	120
gctgctgtgg	actgttggtg	attcctcact	acggcccaag	gttgtggaac	tggcanaaag	180
gtgtgttgtt	gganttgagc	tggggcggct	gtggtaggtt	gtgggtctct	caacaggggc	240
tgtgtgtgtg	ccgggaggtg	aangtgttgt	gtcacttgag	cttggccagc	tctggaaagt	300
antanattct	tccgtgaagg	cagcgcttgt	ggagutggca	nqggtcantg	ttgtgtgtaa	360
cgaaccagtg	ctgctgtggg	tgggtgtano	tcctccacaa	agcctgaagc	tatggtgtcn	420
tcaggtatna	atgtggtttc	agtgtccctg	ggcngctgtg	qaaggttgtg	natgttcacc	480
aagggaalaa	gctgtgtg					498

&lt;210&gt; 160

&lt;211&gt; 380

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(380)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 160

acctgcatcc	agcttccctg	ccaaactcac	agggagacat	caacctctcg	acaggggaac	60
agcttcaggc	tacttccagg	agacagagcc	acacagcagc	aaacaaatac	tccctgtcct	120
ggagcatggc	atagaggaag	ctganaaatg	tggggctctg	ggaagccatt	tgagtctggc	180
cactagacat	ctcatcagcc	acttggtgtg	agagatgccc	catgacccca	gatgcctctc	240
ccacccctac	ctccctctca	caacattgag	ctttccactc	tgtataattc	taacatctct	300
gagaaaaatg	gcagtttgac	cgaacctgtt	cacaacggta	gaggctgatt	tctaacgaaa	360
cttgtagaat	gaagcctgga					380

&lt;210&gt; 161

&lt;211&gt; 114

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 161

actccacatc	ccctctgagc	aggcggttgt	cgttcaagggt	gtatttggcc	ttgcctgtca	60
cactgtccac	tggcccttta	tccacttggt	gcttaalccc	tggaaagagc	atgt	114

&lt;210&gt; 162

&lt;211&gt; 177

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 162

acttLctgaa	tcgaatcaaa	tgatacttag	tgtagtttta	atatcctcat	atatatcaaa	60
gttttactac	tctgataatt	ttgtaaacca	ggtaaccaga	acatccagtc	atacagcttt	120
Lggtgatata	taacttggca	ataaccagat	ctggtgatac	ataaaactac	tcactgt	177

&lt;210&gt; 163

&lt;211&gt; 137

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

<221> misc\_feature  
 <222> (1)...(137)  
 <223> n = A,T,C or G

<400> 163  
 cattatataca gacaggcgtg aagacattca cgacaaaaac gcgaaattcl atcccgtagc 60  
 canagaaggc agctacggct actcctacat cctggcgtgg gtggccttcg cctgcacctt 120  
 catcagcggc atgatgt 137

<210> 164  
 <211> 469  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(469)  
 <223> n = A,T,C or G

<400> 164  
 cttatcacaa tgaatgttct cctgggcagc gttgtgatct ttgcacacct cgtgacttta 60  
 tgcaatgcct catgctatct cctacctaact gagggagttc caggagattc aaccaggaaa 120  
 tgcattggatc tcaaaaggaa caaacaccca ataaactcgg agtggcagac tgacaactgt 180  
 gagacatgca ctgtgtcaga aacagaaatt tcatgttgca cctttgtttc tacacctgtg 240  
 ggttatgaca sagacaactg ccaaaagaatc ttaagaagg aggaactgan gtatatcgtg 300  
 gtggagaaga aggaccacaa saagaacctg tctgtcagtg aatggataat ctantgtgct 360  
 totagtaggc acagggctcc caggccaggc ctcaattctcc tctggcctct aatagtcaat 420  
 gattgtgtag ccatgcctat cagtaaaaag atntttgagc aaacacttt 469

<210> 165  
 <211> 195  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(195)  
 <223> n = A,T,C or G

<400> 165  
 acagtttttt atanatateg acattgccgg caettgtgtt cagtttcaia aagctgggtg 60  
 atccgctgtc atccactatt ccttggttag agtaaaaatt attolctatg cccatgtccc 120  
 tgcaggccgc ccgcccgtag ttctcgtccc agtngtcttg gcacacaggg tgcacaggact 180  
 tccctctgaga tgagt 195

<210> 166  
 <211> 383  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(383)  
 <223> n = A,T,C or G

<400> 166  
 acatcttagt agtgtggcac atcaggaggc catcagggtc acagtcactc atagcctcgc 60  
 cgaggctcga gtccacacca ccggtgtagg tgtgtctaat cttgggcttg gcgcccacct 120  
 ttggagaagg gatagtctgc acacacatgt ccaacaagcc tgtgaactcg ccaagatt 180  
 ttgcagacc agcctgagca agggcggat gttcagcttc aglccctct tctcaggtg 240  
 gatccaacc tctgtcangg tccgtgggaa gctgggtgccc acntcaccta caacctgggc 300  
 gangatctta taaagaggct ccnagataaa ctccacqaaa cttctctcgg agctgctagt 360

ngggggccttt ttggtgaact ttc

383

<210> 167  
 <211> 247  
 <212> DNA  
 <213> Homo sapien  
 <220>  
 <221> misc feature  
 <222> (1)...[247]  
 <223> n = A,T,C or G

&lt;400&gt; 167

acagagccag accttggcca taaatgaanc agagattaag actaaacccc aagtccganat	60
tggagcagaa actggagcaa gaagtgggcc tggggctgaa gtagagacca aggccactgc	120
catanccata cacagagcca actctcaggc caaggcnatg gttggggcag anccagagac	180
tcaelctgan tccaaaatgg tggctggaa cctggctcatg acanaggcag tgactctgac	240
tgangtc	247

<210> 168  
 <211> 273  
 <212> DNA  
 <213> Homo sapien  
 <220>  
 <221> misc feature  
 <222> (1)...[273]  
 <223> n = A,T,C or G

&lt;400&gt; 168

acttctaagt ttctataaag tggauaggatt gtantcatcc tgaaaatggg tttacttcaa	60
aetccctcan ccttgltcct cactactgct tatactgana gtgtcatggt tccacaaagg	120
gotgacccct gagccctgnat ttccactcat ccttgagaag ccttttccag taggggtggc	180
aattcccaa: ttctttgcca caagcttccc aggttttctc ccttggaaaa ctccagcttg	240
agtcccatgt acactcatgg gctgacctgg gca	273

<210> 169  
 <211> 431  
 <212> DNA  
 <213> Homo sapien  
 <220>  
 <221> misc feature  
 <222> (1)...[431]  
 <223> n = A,T,C or G

&lt;400&gt; 169

acagccttgg cttccccaaa ctccacagtc tcaagtgcaga aagatcatct tccagcagtc	60
agctcagacc agggkcaaa gctgtgacal caacagtttc tggtttcaga acaggttcta	120
ctactgtcaa atgacccccc atacttccic aaaggctgtg gtaagttttg cacaggtgag	180
ggcagcagaa agggggfant tactgatgga ccccatcttc ttgtatact ccacactgac	240
cttgccatgg gcasaggccc ctaccacaaa acaaatagge tcactgctgg gcaccagctc	300
acgcacatca ctgacaaccg ggatggaaaa agaanlgcca acttccatcc atccaaactgg	360
aaagtgatct gatactggat tcttaattac ctllcaaaagc ttctgggggc catcagctgc	420
tcgaacactg a	431

<210> 170  
 <211> 266  
 <212> DNA  
 <213> Homo sapien  
 <220>

55

<221> misc\_feature  
 <222> (1)...(266)  
 <223> n = A, T, C or G

<400> 170  
 acctgtgggc tgggctgtta tgctgtgcc ggctgtgaa agggagttca gaggtggagc 60  
 tcaaggagct ctgcaggcat tttgccaanct ctctccanag canagggagc aacctacact 120  
 ccccgctaga aagacaccag attggagtc tgggaggggg agttgggggtg ggcatttgat 180  
 gtatcttgt cacttgaatg aangagccag agaggaanga gacgaanatg anattggcct 240  
 tcaasgctag gggctctggca ggtgga 266

<210> 171  
 <211> 1248  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(1248)  
 <223> n = A, T, C or G

<400> 171  
 ggcagccaaa tcataaacgg cgaggactgc agcccgccact cgcagccctg gcaggcggca 60  
 ctggtcatgg aaaacgaatt gttctgctcg ggcgacctgg tgcctccgca gtgggtgctg 120  
 tcagccgcac actgtttcca gaagtgaagt cagagctcct acaccatcgg gctgggacctg 180  
 cacagtcttg aggcggacca agagccaggg agccagatgg tggaggccag cctctccgta 240  
 cggcaccacg agtaccacag acccttgctc gctaaccgac tcatgtctcat caagttggac 300  
 gaatccgtgk ccgagctctga caccatccgg agcatcagca ttgcttcgca gtgcccctacc 360  
 gcgggggaact cttgcctcgt ttctggcttg ggtctgctgg cgaacggcag aatgcctacc 420  
 gtgctgcagt gcgtgaacgt gtccgttggtg tctgaggagg tctgcagtaa gctctatgac 480  
 ccgctgtacc accccagcat gttctgcgcc ggccggaggc aagaccagaa ggactcctgc 540  
 aacggtgact ctggggggcc cctgatctgc aacgggtact tgcagggctt tgtgtctttc 600  
 ggaaaagccc cgtgtggcca agttggcgtg ccagggtgtt acacunaact ctgcaaatlc 660  
 actgagtggg tagagaaaac cgtccaggcc agttaactct ggggactggg aaccctatga 720  
 attgaccccc aaatacatcc tgcgggaagg attcaggaa atctgttccc agccctctcc 780  
 cctccaggcc caggagtcga ggcctccagc cctctctccc tcaaaccaag ggtacagatc 840  
 cccagccctc cctccctcag aaccaggagt ccagaccccc cagccctctc tccctcagac 900  
 ccaggagtcc agccctctc cctccagacc caggagtcga gacccccag cccctctctc 960  
 ctccagaccca ggggctccag ccccccaccc ctctctctcc agactcagag gtccaagccc 1020  
 ccaacccttc attcccccag cccagagggt cagggtccag cccctctctc ctccagaccca 1080  
 ggggtccaat gccacctaga ctntccctgt acacagtgc ccttgttgge acgttgaccc 1140  
 aaccllaccg gttggttttt cttttttngt ccttttcccc tagatccaga aataaagttt 1200  
 aagagaagng caaaaaaaa aaaaaaaa aaaaaaaa aaaaaaaa 1248

<210> 172  
 <211> 159  
 <212> PRT  
 <213> Homo sapien

<220>  
 <221> VARIANT  
 <222> (1)...(159)  
 <223> Xaa = Any Amino Acid

<400> 172  
 Met Val Glu Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Pro  
 1 5 10 15  
 Leu Leu Ala Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser  
 20 25 30  
 Glu Ser Asp Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr  
 35 40 45  
 Ala Gly Asn Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Gly

56

50	Arg Met Pro Thr Val Leu Gln Cys Val Asn Val Ser Val Val Ser Glu	60
65	Glu Val Cys Ser Lys Leu Tyr Asp Pro Leu Tyr His Pro Ser Met Phe	75
	Cys Ala Gly Gly Gly Gln Xaa Gln Xaa Asp Ser Cys Asn Gly Asp Ser	90
	Gly Gly Pro Leu Ile Cys Asn Gly Tyr Leu Gln Gly Leu Val Ser Phe	105
	Gly Lys Ala Pro Cys Gly Gln Val Gly Val Pro Gly Val Tyr Thr Asn	120
	Leu Cys Lys Phe Thr Glu Trp Ile Glu Lys Thr Val Gln Ala Ser	135
145		155

&lt;210&gt; 173

&lt;211&gt; 1265

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(1265)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 173

ggcagccgcg	actgcagcc	ctggcagggc	gcactggtca	tggaaaacga	attgttctgc	60
tcgggagctc	tggtgcaccc	gcagtgaggc	ctgtcagccg	cacactgttt	ccagaactcc	120
tacaccatcg	ggctgggccc	gcacagtctt	gaggccgacc	aagagccagg	gagccagatg	180
gtggaggcca	gcctctccgt	acggcaacca	gagtacaaca	gaccttgcct	cgctaaccac	240
ctcatgctca	tczagttgga	cgaatccgtg	tcagagtctg	acaccatccg	gagcatcagc	300
attgcttccg	agtgcacctc	cgcgggggaa	tcttgccctg	tttctggctg	gggtctgctg	360
gcgaacggcg	agctcaccgg	tgtgtgtctg	ccctcttcaa	gyaggtccct	tgcccagtcg	420
cgggggctga	cccgagagtc	tgcgtccccc	gcagaatgcc	taccgtgctg	cagtgggtga	480
acgtgtccgt	gggtgtctga	gaggtctgca	gtaaagctct	tgaccgcctg	taccacccca	540
gcctgttttg	cgcggggcgg	gggcaagacc	agaaaggact	ctgcacccgt	gactctgggg	600
ggccctcga	ctgcaacggg	tacttgccgg	gccttgctgc	cttcgggaac	gccccgtgtg	660
gccaggttgg	cgtgccaggt	gtclacacna	ccctctgcga	atcactgag	tggtatgaga	720
aaaccgtcca	ggccagttaa	ctctggggac	tgggaaaccca	tgaactlgac	ccccaaatac	780
atctgcgga	aggaattcag	gaatatctgt	tcccagcccc	tctcctcca	ggccnaggag	840
tccagggccc	cagcccctcc	tccctcaaac	caagggtaca	gatccccagc	ccctctccc	900
tcagaccrag	gagtccagac	cccccagccc	ctcctccctc	agacccagga	gtccagcccc	960
tctcctntca	gacccaggag	tccagacccc	ccagcccctc	ctcctcaga	cccaggggtt	1020
gaggccccca	acccctcctc	cttcagagtc	agaggtccaa	gcccccaacc	cctcgttccc	1080
cagacccaga	ggttnaggtc	ccagcccctc	ttccttcaga	cccagnggtc	caatgccacc	1140
tagattttcc	ctgnacacag	tgcccctctg	tggmangttg	acccaacctt	accagttggt	1200
ttttcatttt	tngtcccttt	cccctagatc	cagaaataaa	gtttaagaga	ngngcaaaaa	1260
aaaaa						1265

&lt;210&gt; 174

&lt;211&gt; 1459

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(1459)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 174

ggtcagccgc	acactgtttc	cagaagtgag	tgacagagtc	ctacaccatc	gggctgggcn	60
tgacagagtc	tgaggccgac	caagagccag	ggagccagat	gggtggaggcc	agcctctncc	120
tacggcacc	agagtacaac	agacccttgc	tcgctaacga	cctcatgctc	atcaagttgg	180

acgaatccgt	gtccgagttct	gacacccatcc	ggagccatcag	catttgcttcg	cagtgcacct	240
cgcgggggaa	ctcttgcctc	gtttctggct	ggggctctct	ggcgaaacgt	gagctcacgg	300
gtgltgtct	gacctcttca	aggaggtcct	ctgcccagtc	gcgggggctg	acccagagct	360
ctgcgtccca	ggcagaatgc	ctaccgtgct	gcagtgcttg	aacgtgtctg	tggtgtclga	420
ngaggtctgc	antaagctcl	atgacccgct	gtaccacccc	ancatgttcl	gcgcgggctg	480
agggcaagac	cagaaggaat	cctgcaacgt	ggagaggggg	aaaggggagg	gcaggcgact	540
caggggaagg	tggaggaagg	ggagacagag	acacccaggg	ccgcctggcg	agctgcagag	600
atggagagac	acacagggag	acagtgcacaa	ctagagagag	aaactgagag	aaacagagga	660
ataaacacag	gaataaagag	aagcagaagg	agagagaaac	agaaacagac	atggggaggc	720
agaaacacac	acacatagaa	atgcagttga	ccttccacaa	gcctggggcc	tgagggcggt	780
gacctccacc	caatagaaaa	tectcttata	acttttgact	ccccaaaaac	ctgactagaa	840
atagcctact	gttgacgggg	agccttacca	ataacataaa	tagtngattt	atgcatacgt	900
tttatgcat	catgatatac	ctttgttgga	attttttgat	atttctaagc	tacacagttc	960
gtctgtgaat	tttcttaaat	tgttgcaact	ctcctaaaaat	ttttctgatg	tgtttattga	1020
aaaaatccaa	gtataagtgg	acttgtgcat	tcaaaccagg	gttgttcaag	ggtcaactgt	1080
gtacccagag	ggaaacagtg	acacagattc	atagaggtga	aacacgaaga	gaaacaggaa	1140
aatcaagac	tctacaaaga	ggctgggcag	ggtggtcat	gcctgtaatc	ccagcacttt	1200
gggagggag	gcaggcagat	cacttgaggt	aaggagttca	agaccagcct	ggccaaaatg	1260
gtgaaatcct	gtctgtacta	aaaatacaaa	agttagctgg	atatggtggc	aggcgacctg	1320
aatccagct	acttgggagg	ctgaggcagg	agaattgctt	gaatatggga	ggcagaggtt	1380
gaagtgaatt	gagatcacac	cactatactc	cagctggggc	aacagagtaa	gactctgtct	1440
caaaaaaaaa	aaaaaaaaaa					2459

&lt;210&gt; 175

&lt;211&gt; 1167

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(1167)

&lt;223&gt; n - A,T,C or G

&lt;400&gt; 175

ggcagccct	ggcaggcggc	actggtcatg	gaaaaagaa	tggtctgtct	gggcgtcctg	60
gtgcattcgc	agtgggtgct	gtcagccgca	cactgtttcc	agaactccta	caccatcggg	120
ctgggctcgc	acagtcttga	ggccgaccaa	gagccaggga	gccagatggt	ggaggccagc	180
cttctcgtac	ggcaccacga	gtacaacaga	ctcttgcctg	ctaacgacct	catgctcctc	240
aagtlggacg	aatccglgtc	cgaatctgac	accatccggg	gcatcagcat	tgcttcgcag	300
lqccctaccg	cggggaactc	ttgcclcgta	tctgcttqgg	gtctgctagg	gaaagycaga	360
atgcctacng	tgttgcactg	cgtgaacgtg	tcggtggtgt	ctgaggngt	ctgcagtaag	420
ctctatgacc	cgtgtaccca	ccccagcatg	tcttgccgca	gcggaggggc	agacacagag	480
gactcctgca	acggtgaact	tggggggccc	ctgatctgca	acgggtactt	gcagggcctt	540
gtgtctttcg	gaaaagcccc	gtgtggccaa	cttggcgtgc	cagggtgtct	caccacacct	600
tgcgaattca	ctgagtggt	agagaaaaac	gtccagncca	gttaactctg	gggactggga	660
acccatgaaa	ttgaccccca	aatacatcct	gcggaangaa	ttcagggaata	tctgttccca	720
gcccctcttc	cctcaggccc	aggagtccag	gccccagccc	cctcctccct	caaaccaagg	780
gtacagatcc	ccagcccttc	ctccctcaga	cccaggagtc	cagacccccc	agccctcctt	840
ccntcagacc	caggagtcca	gcccctcctc	cntcagacgc	aggagtccag	accccccagc	900
ccntcctccg	tcagacccag	gggtgcaggc	cccaaacccc	tcntccntca	gagtcagagg	960
tccaagcccc	caacccctcg	ttccccagac	ccagaggtnc	aggtcccagc	ccctcctccc	1020
tcagacccag	cgggtccaatg	ccacctagan	tnccctgta	cacagtgcgc	ccttgtggca	1080
ngttgaccca	accttaccag	ttggttttct	attttttgtc	cctttccctt	agatccagaa	1140
ataaagtnta	agagaagcgc	aaaaaaa				1167

&lt;210&gt; 176

&lt;211&gt; 205

&lt;212&gt; PRT

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; VARIANT

&lt;222&gt; (1)...(205)

&lt;223&gt; Xaa = Any Amino Acid

&lt;400&gt; 176

```

Met Glu Asn Glu Leu Phe Cys Ser Gly Val Leu Val His Pro Gln Trp
 1      5      10      15
Val Leu Ser Ala Ala His Cys Phe Gln Asn Ser Tyr Thr Ile Gly Leu
 20      25      30
Gly Leu His Ser Leu Glu Ala Asp Gln Glu Pro Gly Ser Gln Met Val
 35      40      45
Glu Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Leu Leu Leu
 50      55      60
Ala Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser Glu Ser
 65      70      75      80
Asp Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr Ala Gly
 85      90      95
Asn Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Gly Arg Met
100      105      110
Pro Thr Val Leu His Cys Val Asn Val Ser Val Val Ser Glu Xaa Val
115      120      125
Cys Ser Lys Leu Tyr Asp Pro Leu Tyr His Pro Ser Met Phe Cys Ala
130      135      140
Gly Gly Gly Gln Asp Gln Lys Asp Ser Cys Asn Gly Asp Ser Gly Gly
145      150      155      160
Pro Leu Ile Cys Asn Gly Tyr Leu Gln Gly Leu Val Ser Phe Gly Lys
165      170      175
Ala Pro Cys Gly Gln Leu Gly Val Pro Gly Val Tyr Thr Asn Leu Cys
180      185      190
Lys Phe Thr Glu Trp Ile Glu Lys Thr Val Gln Xaa Ser
195      200      205

```

&lt;210&gt; 177

&lt;211&gt; 1119

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 177

```

ggcgactcgc agccctggca ggcggcactg gtcattggaag acgaattggt ctgctcgggc      60
gtcctggtgc atccgcagtg ggtgctgtca gccgcacact gtttccagaa clectacacc      120
atcgggotgg gcctgcacag tcttgaggcc gaccagagagc cagggagcca gatggtggag      180
gccagcotct ccgtacggca cccagagtac aacagaccct tgcctgcclaa cgaacctcatg      240
ctcatcagat tggacgaatc cgtgtccgag tctgacacca kccggagcat cagcattgct      300
tcgcagtgcc ctaccggggg gaactcttgc ctggtttctg gctgggggtct gctggcgaaac      360
gatgctgtga ttgccatcca gtcccagact glgggagact gggagtgtga gaagctttcc      420
caacuctggc agggttgtac cattkcgga acttccagtg caaggacgtc ctgctgcate      480
ctcactgggt gctcactact gctcactgca tccccggaa cactgtgatc aactagccag      540
caccatagtt ctccgaagtc aqactatcat gattactgtg ttgactgtgc tgtctattgt      600
actaaccctg cngatgttta ggtgaaatta gcgtcacttg gcctcaacca tottggtatc      660
cagttatcct cactgcaattg agatttcctg cttcagtgtc agccattccc acataatttc      720
tgacctacag aggtgagggg tcatatagct cttcaaggat gctggtacte ccttcacaaa      780
ttcatttctc ctggtgtagt gaaaggtgcg cctctggag cctcccaggg tgggtgtgca      840
ggtcacaatg atgaatgtat gatcgtgttc ccattacca aagcctttta atccctcatg      900
ctcagtaaac cagggcaggt ctagcatttc ttcatttagt gtatgctgtc cattcatgca      960
accacctcag gactcctgga ttctctgcct agttgagctc ctgcatgctg cctccttggg      1020
gaggtgaggg agagggccca tggttcaatg ggaatctgtc agttgtacaa cattaggtgc      1080
ttaataaaca gaagctgtga tgttaaaaaa aaaaaaanaa      1119

```

&lt;210&gt; 178

&lt;211&gt; 164

&lt;212&gt; PRT

&lt;213&gt; Homo sapi n



<220>  
 <221> VARIANT  
 <222> (1)...(164)  
 <223> Xaa - Any Amino Acid

<400> 178  
 Met Glu Asn Glu Leu Phe Cys Ser Gly Val Leu Val His Pro Gln Trp  
 1 5 10 15  
 Val Leu Ser Ala Ala His Cys Phe Gln Asn Ser Tyr Thr Ile Gly Leu  
 20 25 30  
 Gly Leu His Ser Leu Glu Ala Asp Gln Glu Pro Gly Ser Gln Met Val  
 35 40 45  
 Glu Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Pro Leu Leu  
 50 55 60  
 Ala Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser Glu Ser  
 65 70 75 80  
 Asp Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr Ala Gly  
 85 90 95  
 Asn Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Asp Ala Val  
 100 105 110  
 Ile Ala Ile Gln Ser Xaa Thr Val Gly Gly Trp Glu Cys Glu Lys Leu  
 115 120 125  
 Ser Gln Pro Trp Gln Gly Cys Thr Ile Ser Ala Thr Ser Ser Ala Arg  
 130 135 140  
 Thr Ser Cys Cys Ile Leu Thr Gly Cys Ser Leu Leu Leu Thr Ala Ser  
 145 150 155 160  
 Pro Gly Thr Leu

<210> 179  
 <211> 250  
 <212> DNA  
 <213> Homo sapien

<400> 179  
 ctggagtgcc ttggtgtttc aagccctgc aggaagcaga atgcaccttc tgaggcacct 60  
 ccagctgcc ccggccgggg gatgcgaggc tcggagcacc ctgcccggc tgtgattgct 120  
 gccaggcact gtccatctca gctttctgt cctttgtct ccggcagcg cttctgctga 180  
 aagttcatat ctggagcctg atgtcttaac gaataaaggc cccatgctcc aaccgaaaaa 240  
 aaaaaaaa 250

<210> 180  
 <211> 202  
 <212> DNA  
 <213> Homo sapien

<400> 180  
 actagtccag tgggtggaa ttccattgtg ttgggcccaa cacaatggct acctttaaca 60  
 tcaacagagc ccggccctgt cccgtgccc acgctgctgc taacgacagt atgatgctta 120  
 ctctgtact cggaaactat ttttatgtas ttaatgtatg ctttcttgtt tataaatgcc 180  
 tgatttaaaa aaaaaaaaaa aa 202

<210> 181  
 <211> 558  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc featur  
 <222> (1)...(558)  
 <223> n = A,T,C or G

60

```

<400> 181
tccttttggk naggttttkkg agacacccck agacctwaan ctgtgtcaca gacttcynqg      60
aatgttttagg cagtgcctagt aatttcytcg taatgattct gttattactt tcctnattct      120
ttattcctct ttcttctgaa gattaatgaa gttgaaaatt gaggtggata aatac00000      180
ggtagtgtga tagtataagt atctaagtgc agatgaaagt gtgttatata tatcccttca      240
aaattatgca agttagtaat tactcagggt taactaaatt actttaatat gctgttgcac      300
ctactctgtt ccttggctag aaaaaattat aaacaggact ttgttagttt gggagccca      360
attgataata ttctatgttc taaaagttgg gctatacata aattattaag aaatatggaw      420
ttttattccc aggaatatgg kgttcatttt atgaatafta csurggatag awgtwlgagt      480
aaaaycagtt ttggtwaata ygtwaatatg tcmteaataa acaakgottt gacttatttc      540
caaaaaaaaa aaaaaaaa

```

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<210> 182
<211> 479
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(479)
<223> n = A,T,C or G

```

```

<400> 182
acagggwttk grgatgcta agacccorga rwtggtttga tccaacctg gottwttttc      60
agaggggaaa atggggccta gaagttacag macatytagy tgggtggmfg gcacccctgg      120
ctcacacag astcccgagt agctgggact acaggcacac agtcactgaa gcaggccctg      180
ttwgaattc acgttgcacac ctccaactta aacattcttc atatgtgatg tccttagtca      240
ctaaggttaa actttccacac ccagaaaagg caacttagat aaaatcttag agtaacttca      300
tacttttcta agtctcttcc cagcctcact kkgagtccctm cytgggggtt gataaggaant      360
ntctcttggc tttctcaata aartctctat ycatctcatg ttttaatttg taagcclara      420
awtgatgare aaattaaaat gtctctggtty mactttaaaa 000000000 000000000      479

```

```

<210> 183
<211> 384
<212> DNA
<213> Homo sapien

```

```

<400> 183
agggcgggagc agaaagctaaa gccaaagccc aagaagagtg gcagtgccag cactgggtgcc      60
aglcceagla ccaataacag tgccagtgcc agtgccagca ccagtgggtg cttcagtgtc      120
gggtgccagcc tgaccgccac tctcacattt gggctcttct ctggccttgg tggagctggt      180
gccagcacca gtggcagctc tgggtgcctgt ggtttctcct acaagtgaga ttttagatat      240
tgtaatcct gccagtcttt ctcttcaagc caggggtgat cctcagaacac ctactcaaca      300
cagcactcta ggcagccact atcaatcaat tgaagttgac acctctgcatt aratctattt      360
gccatttcaa aaaaaaaaaa aaaa

```

```

<210> 184
<211> 496
<212> DNA
<213> Homo sapien

```

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<220>
<221> misc_feature
<222> (1)...(496)
<223> n = A,T,C or G

```

```

<400> 184
acugaatttg gaccgctggc ttataagcga tcatgtyynt ccrgtatcac ctcaacgagc      60
agggagaglcg agtctctacg ctgaagaaat ttgacccgat gggacaacag acctgctcag      120
cccatctctac tgggttctcc ccagatgaca aatactctag acaccgaate accatcaaga      180
aacgcttcae ggtgctcatg acccagcaac cgcgcctgt cctctgaggg tcccttaaac      240
tgalgtcttt tctgccacct gttacccctc ggagactccg taaccaaact cttcggactg      300

```

61

tgagccctga	tgcctttttg	ccagccatag	tccttggtgc	ccagctctctc	gtggcgattg	360
attatgcttg	tgtgagggca	tcctgggtgc	atcaccacata	aaagggaacac	atttgaacttt	420
ttttctcat	attttaaatt	actacmagaw	tcttwwagaw	waatqawtt	gaaatcctst	480
taaaaaaa	aaaaaa					496

<210> 185  
 <211> 384  
 <212> DNA  
 <213> Homo sapien

<400> 185						
gctggtagcc	tatggcgkcg	cccacggagg	ggctectgag	gccacggrac	agtgaacttcc	60
caagtatcyt	gcgcagcgctc	ttctaccgctc	cctacctgca	gatcttcggg	cagattcccc	120
aggaggscat	ggacgtggcc	ctcatggagc	acagcaactg	ytctcgagg	cccggtctct	180
gggcacaccc	tcctggggcc	caggcgggca	cctgcgtctc	ccagtatgcc	aactggctgg	240
tgggtgctgt	cctcgtcatc	ttcctgctcg	tggccaacat	cctgctggtc	aacttgcctc	300
ttgccatgtt	cagttacaca	ttcggcaaa	tacagggcaa	cagcgatctc	tactgggaag	360
gcgcagcggt	accgcctcat	cgg				384

<210> 186  
 <211> 577  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(577)  
 <223> n = A,T,C or G

<400> 186						
gagttagctc	ctccacaacc	ttgatgaggt	cgtctgcagt	ggcctctcgc	ttcataccgc	60
tnccatogtc	atactgtagg	tttgccacca	cytcctggca	tcctggggcg	gcntaatatt	120
ccaggaaact	ctcaatcaag	tcaccgtcga	tgaaccctgt	gggctgggtc	tgtcttccgc	180
tcgggtgtga	aggatctccc	agaaggagtg	ctcgatcttc	cccacacttt	tgatgaacttt	240
attgagtcga	ttctgcatgt	ccagcaggag	gttgtaccag	ctctctgaca	gtgaggtcac	300
cagccctatc	atgcggttga	mcgtgcggaa	garcaccgag	ccttgtgtgg	gggkkgaaat	360
ctcaccagga	ttctgcattc	ccagcagagcc	gtggcuaaag	acattgacaa	actcgcccag	420
gtggaaaaag	amcamctccl	ggargtqctn	gcgcctctct	gtcmgttggg	ggcagcgctw	480
tccttttgac	acacacacac	gttaaaaggcc	tttccagccc	ccagaaantt	gtcatcatcc	540
aaagtntcgc	acagcactna	tcagllqgg	attaaat			577

<210> 187  
 <211> 534  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(534)  
 <223> n = A,T,C or G

<400> 187						
aacatcttcc	tgtataatgc	tgtgtaatat	cgatccgatn	ttgtctgstg	agaatycatw	60
actkqgaaaa	gmaacattau	agcctggaca	ctgggtattaa	aattcacaa	atgcaacact	120
ttazacagtg	tgtcaatctc	ctcccyynac	tttgtcatca	ccagtctggg	aakaagggta	180
tgccttatte	acacctgtta	aaaggacqct	aaacattttt	gattcaacat	cttttttttt	240
gacacaaagtc	cgaaauaaagc	aaagctwaa	agllatyaat	ttgttagcna	attcaacttc	300
ttcatgggac	agagccatyt	gatttcaaaa	gcnaatttga	laattattgag	cttygggagc	360
tgalalttga	gcgqaaggat	agcctttcta	cttcaacaga	cccaaccccc	ttcatatttg	420
ggatgttnac	naaagtwtatg	tctctwacag	atgggatgct	tttgaggcaa	ttcttctctg	480
aggaclcccc	agtlctattta	ccacttgcac	aagaaagcgt	tttcttctct	agga	534

62

<210> 188  
 <211> 761  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> {1}...{761}  
 <223> n = A,T,C or G

<400> 188  
 agaaaccagt atctctnaaa acaacctctc ataccttctg gacctaatTT tgtgtgcgtg 60  
 tgtgtgtgcg cgcataattat atagacaggc acatcttttt tacttttcta aaagcttatg 120  
 cctctttggg atctatatct gtgaaagttt taatgatctg ccataaatgtc ttggggacct 180  
 ttgtctttctg tgtaaatggt actagagaaa acacctatnt tatgagtcaa tctagttngt 240  
 ttatttogac atgaaggaaa ttctungctn ccaacacina caaacctctc clkgackarg 300  
 ggggacaaag aaaaagcaaaa ctgacacataa caaacctwa cctggtgaga arttgcataa 360  
 acagaaatwr ggtgtgtatat tgaarnacag catcattaaa rmgttwkkt wttctccctt 420  
 gcaaaaaaca tgtacngact tcccgttgcg laetgccaag ttgttttttt tatnataaaa 480  
 cttgcuccctc attacatggt tnaaagtggg gtggtgggcc aaatatattga aatgatggaa 540  
 ctgactgata aagctgtaca aalaagcagt gtgcctaaca agcaacacag taatgttgac 600  
 atgcttaatt cacaaatgct aatttcatta taaatgtttg ctaaaataca ctttgaacta 660  
 tttttctgtn tloccagagc tgagatntta gattttatgt agtatnaagt gaaaaantac 720  
 gaaaalaafa acattgagga aaaaananaa aaaaaaaa a 761

<210> 189  
 <211> 482  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> {1}...{482}  
 <223> n = A,T,C or G

<400> 189  
 tttttttttt ttgtccgatn ctactatttt attgeaggan gtgggggtgt atgcacgcga 60  
 caccggggct atnagaagca agaaggaagg agggagggga cagccccttg ctgagcaaca 120  
 aagccgcctg ctgccttctc tgtctgtctc ctggtgcagg cacatgggga gaccttcccc 180  
 aaggcagggg ccaccagtcc aggggtggga atacaggggg tgggagtgt gcataagaag 240  
 tgataggcac aggccaccgc gtacagacc ctcggtctct gacaggtnga ttctgaccag 300  
 gtcatttctg cctgccacgg cacagcgtan atctggaaa gacagaatgc ttctctttc 360  
 aaatttggt ngtcatngaa ngggcanctt tccaanttng gctnggtctt ggtacnctt 420  
 gttcggccca gctccnctc caaaaantat tcacccnct ccnaattgct tgcnggnucc 480  
 cc 482

<210> 190  
 <211> 471  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> {1}...{471}  
 <223> n = A,T,C or G

<400> 190  
 tttttttttt ttttaaaaca gtttttcaca aaaaaattta ttagaagaat agtggttttg 60  
 aaaactctcg catccagtga gaactaccat acaccacatt acagctngga atgtncctca 120  
 aatgtctggt caaatgatac aatggaacca ttcaatttta cacatgcacg aaagaacaag 180  
 cgttttgac atacaatgca caaaaaaaa aggggggggg gaccacatgg attaaaattt 240  
 taagtactca tcacatacat taagacacag ttctagtcca gtcnaaaatc agaactgcnt 300

tgaaaaatttt	catgtatgca	atcccaaccaa	agaacttnat	tggtgatcat	gantnctcta	360
ctacatcnac	cttgatcatt	gccagggaacn	asaagtttaa	ancaacnngt	acaaaanaaa	420
tctgtaattn	anttcacccct	ccgtacngaa	aatnttntnt	tatacactcc	c	471

<210> 191  
 <211> 402  
 <212> DNA  
 <213> Homo sapien  
  
 <220>  
 <221> misc\_feature  
 <222> {1}...{402}  
 <223> n = A,T,C or G

<400> 191						
gagggattga	aggtctgttc	taatgtcggm	ctgttcagcc	accaactcta	acaagttgct	60
gtcttccact	cactgtctgt	aagcttttta	accagacwg	tatcttcala	aatagaacaa	120
attcttcacc	agtcacatct	tctaggacct	ttttggatcc	agttagtata	agctcttcca	180
cttcctttgt	taagacttca	tctggtaaa	tcttaagttt	tqlagaaagg	aettyaattg	240
ctcgttctct	aacaatgtcc	tctccttgaa	gtatttggct	gaacacccca	cctaaagtcc	300
ctttgtgcac	ccattttaaa	tatacttaat	agggaattgc	lncaactaggt	taatttctgc	360
aagagtcatc	tgtctgcaaa	agttgcgtta	gtctctctgc	ca		402

<210> 192  
 <211> 601  
 <212> DNA  
 <213> Homo sapien  
  
 <220>  
 <221> misc\_feature  
 <222> {1}...{601}  
 <223> n = A,T,C or G

<400> 192						
gagctcggat	ccaataatct	ttgtctgagg	gcagccacaa	taincegtgc	catggnaact	60
ggtctacccc	acatgggagc	agcatgcagt	agntatataa	ggtcattccc	tgagtcagac	120
atgcyytttt	gaytaccttg	tqccaaagtgc	kggtgaltct	yaacacacyt	ccatcccgyt	180
cttttctgga	aaaactggcc	cttktctgga	actagcarga	catcacttac	aaattcacc	240
acgagacact	tgaagggtgt	accaaagcga	ytcttgcatt	gctttttgtc	cctccggcac	300
caqtctgtaa	tactaaacccg	ctggtttgc	tccatcacat	ttgtgatctg	tagctctgga	360
tacatctctc	gacgttactg	aagaacttct	tcttttgttt	caaaagcacc	toftgggtgc	420
tgllggalca	ggttccatt	tcccagtcyg	aatgttcaca	tggcatattt	waattccac	480
aaaacattgc	gatttgaggc	tcagcaacag	caaatectgt	tcgggcattg	gctgcaagag	540
ntctgatgta	gccggccragc	gccaaaggcag	gcgccttgag	ccccaccagt	agcagaaagca	600
g						601

<210> 193  
 <211> 608  
 <212> DNA  
 <213> Homo sapien  
  
 <220>  
 <221> misc\_feature  
 <222> {1}...{608}  
 <223> n = A,T,C or G

<400> 193						
atacagccca	natuccacca	cgaagatgcg	cttgttgact	gagaacctga	tgcggtcact	60
ggtcccgttg	tagtcccagc	gactctccac	ctgctggaag	cggttgatgc	tgcactcytt	120
cccaacgcag	gcagmagcgg	gscgggtcaa	tgaactccay	tctgtgcttg	gggtkgaagg	180
tkaagtgcag	gaagaggctg	accacctcgc	ggtccaccag	gatgcccgac	tgtgcgggac	240
ctgcagcgaa	actcctcgat	ggtcatgagc	gggaagcgaa	tgaggcccg	ggccttgccc	300

```

agaacotttc gcoctgttctc tggcgctcacc tgcagctgct gccgctgaca ctgggcctcg      360
gaccagcgga caaacggcrt tgaccagccg caoctcaagg atgccagtg tgcgcgctc      420
caggammgac accagcgtgt ccaggtcaat gtgggtgaaq cccctccgcg gtretggcgt      480
ctgcagtgtt tttgtcgatg ttctccagge acaggetggc cagctgcggc tcatcgaaga      540
gtcgcgccctg cgtgagcagc atgaaggcgt tglcggclog cagttcttct tcagggaactc      600
cacgcaat                                         608

```

```

<210> 194
<211> 392
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(392)
<223> n = A,T,C or G

```

```

<400> 194
gaacggctgg accttgccct gcatttgtct tgcctggcagg gaataccttg gcaagcagyt      60
ccagtcaggag cagcccraga ccgctgcgcg ccgaagctaa gcctgcctct ggcttcccc      120
tccgectcaa tgcagaaaca gtagtgggag cactgtgttt agagttaaga gtgaacactg      180
tttgatttta ctggggaatt tcctctgtta tatagctttt cccaatgcta atttccaaac      240
aacaacaaca aaataacatg tttgcctgtt aagttgtata aaagttagtg attctgtatt      300
taaagaaaat attactgtta catatactgc ttgcaatttc tgtatttatt gktnctstgg      360
aaataaatat agttattaaa ggttgtcant cc                                         392

```

```

<210> 195
<211> 502
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(502)
<223> n = A,T,C or G

```

```

<400> 195
ccattkgagg ggtkaggkyc cagttycga gtggaagaaa caggucaggc gaaqtgcctg      60
ccgagctgag gcagatgttc ccacagtga cccagagccc slgggstata gtytctgccc      120
ccctncaagg aaagaccacs ttctggggac atgggctqga ggcagggccc lagaggcacc      180
aagggaaggc cccattccgg ggstgttccc cggggaggga ggggaggggc tctgtgtgcc      240
ccccagaggg aagaggccct gagtccctgg atcagacacc ccttcacgtg tatccccaca      300
caaatgcaag ctacccaagg tccccctctc gtccccttcc atacaccctg amcgggccact      360
gacscacacc cauccagagc acgccacccg ccctggggar tgtgttcaag gartcgcnng      420
gcarcgtgga cctctngtcc cagaaagggg cagaatctcc aatagangga ctgarcmatt      480
gctnnaaaaa aaaaaaasaa aa                                         502

```

```

<210> 196
<211> 665
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(665)
<223> n = A,T,C or G

```

```

<400> 196
ggttactttg tticattgac accacttagt ggetgtcalt tagaaccatt lctgtctgctc      60
cctctggaag ccttgogcag agcggacttt gtaattgttg gagaataact gctgaatttt      120
wagctgtttk gagttgatts gcaccactgc acccacaact tcaatatgaa aacyawtttg      180
actwatttat tatcttgtga aaytatasc aatgaaaatt ttgttcatac tgtattkac      240

```

```

aagtatgatg aaaagcaawa gatatatatt cttttattat gttaaattat gattggcatt 300
attaatcggo aaaatgtgga gtgtatgttc ttttcacagt aatatatgcc ttttgtaact 360
tcacttgggtt attttattgt aaatgaritc caaaattctt aatttaagar aatgggtatgt 420
watatttatt tcattaattt ctttcotkgt ttacgtwaat ttgaaaaga wtgcattgatt 480
tcttgacaga aatcgatctt gatgctgtgg aagtagtttg acccacatcc ctatgagttt 540
ttcttagaag gtataaagggt tgtagcccat cnaacttcaa agaaaaaat gaccacatac 600
tttgcaatca ggctgaatg tggcatgctn ttctaattcc aactttataa actagcaaan 665
aagtg

```

```

<210> 197
<211> 492
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> {1}...{492}
<223> n = A,T,C or G

```

```

<400> 197
ttttnttLlt ttttttttgc aggaaggatt ccattttattg tggatgcatt ttcacaatat 60
atgtttattg gagcgatcca ttatcagtga aaagtatcaa gtgtttataa natttttagg 120
aaggcagatt cacagaaatc gctngtcngc ttgcagtttt acctcgtana gatnacagag 180
aattatagtc naaccagtaa acnagggaatt tacttttcaa aagattaaat ccaaactgaa 240
caaaattcta ccttgaaaact tactccatcc aaatatgtga ataanagtca gcagtgtatc 300
attctcttct gaactttaga ttttctagaa aaatatgtaa tagtgatcag gaagagctct 360
tgttcaaaag tacaacnaag caatgttccc ttaccatagg ccttaattca aactttgatc 420
catttoactc ccattcacggg agtcaatgct acctgggaca cttgtatitt gttcatnctg 480
ancntggctt aa
492

```

```

<210> 198
<211> 478
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> {1}...{478}
<223> n = A,T,C or G

```

```

<400> 198
ttntttttgn atttcaantct gtannaanta ttttcattat gtttattana aaatatatnaa 60
tgtntccacn acaaatcatn ttacntnagt aagagggcan ctacattgta caacatacac 120
tgagtatatt ttgaaaagga caagttttaa gtanacncat attgccganc atancavatt 180
tatacatggc ttguttgata ttttagacacg canaaactga gtgagttacc aquaenaaal 240
natatatgtc autongattt aagatacaaa acagatcctc lqglauatan catentqlag 300
gagttgtggc lltatgttta ctgaaagtca atgcagttcc tgtacaaaga galggccgta 360
agcattctag tactcttacl ccattggttaa gaatcgtaca cttatgttta catatgtaca 420
gggttaagaat tgtgLaagt nsanttatgg agaggtccan gagaaaaalt tgatncas 478

```

```

<210> 199
<211> 482
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> {1}...{482}
<223> n = A,T,C or G

```

```

<400> 199
agtgaacttgt cctccaaaca aacccttga tcaagtttgt ggcactgaca atcagacctt 60

```

tgcctagttcc	tgtcatctat	tcgtacttaa	atgcagactg	gaggggacca	aaaaggggca	120
tcaactccag	ctggattatt	ttggagcctg	caaactctatt	cttacttgta	cggactttga	180
agtgattcag	tttctcttac	ggatgagaga	ctgggtcagg	aatatcctca	tgcagcttta	240
tgaagccnac	tctgaacacg	ctgggttatct	nagatgagaa	ncagagaaat	aaagtcnaga	300
aaatttacct	ggangaaaag	aggcttttngg	ctggggacca	tccattgaa	ccttctctta	360
anggacttta	agaanaaaact	accacatgtn	tgtngtatcc	tgggtgccngg	cggtttantg	420
ascntngacn	ncaccttnt	ggaatanant	cttgacngcn	tctgaaactt	gctcctctgc	480
ga						482

&lt;210&gt; 200

&lt;211&gt; 270

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; {1}... (270)

&lt;223&gt; n = A, T, C or G

&lt;400&gt; 200

cggccgcaag	tgcactcca	gctggggccg	tgcggagcaa	gattctgcca	gcagttggtc	60
cgaactggac	gcggcgggcg	gcgacagtcg	cagggtgcaq	gcggcgccct	ggggtcttgc	120
aaqgctgagc	tgaacgcgca	gaggctcggt	caagctccca	gacettgacg	cggctgggga	180
cagccgggac	gagagccggg	gaangcggga	ggactcgggg	agccctcggg	gaagggcgga	240
ccgagagata	cgccgggtga	ggtggccgcc				270

&lt;210&gt; 201

&lt;211&gt; 419

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; {1}... (419)

&lt;223&gt; n = A, T, C or G

&lt;400&gt; 201

tttttttttt	ttttgggaatc	tactgcgagc	acagcaggc	agcaacaaat	ttatttttgc	60
gctagcaagg	tacagggta	gggcatgggt	acatgttcag	gtcaacttcc	tttgctcgag	120
ttgattgggt	tgtctttatg	ggggcggggt	ggggtagggg	aaancgaagc	anaantaaac	180
tggagtggtt	gcacccctcc	tgtagaacct	ggttacnaas	gcttggggca	gttcacctgg	240
tctgtgaacg	tcattttctt	gacatcaatg	ttattagaag	tcaggatata	ttttagagag	300
tccactgtnt	ctggaggggg	attagggttt	cttgccaana	tccaancaa	atccacntga	360
aaaagttgga	tgatnoangt	acngaatacc	ganggcatan	ttctcatant	cggtaggcca	419

&lt;210&gt; 202

&lt;211&gt; 509

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; {1}... (509)

&lt;223&gt; n = A, T, C or G

&lt;400&gt; 202

tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	60
tggcacttaa	tccattttta	tttcaaaatg	tctacaaant	ttnaatnong	cattatacng	120
gttatttttc	aaaatctaaa	onttattcaa	atntnagcra	aentccttcc	ncbaatnnaa	180
tacnncnaaa	aatcaaaaat	atacntntct	ttcagcaaac	ttngttacat	aaattaaaaa	240
aatatatacg	gctgggtgtt	tcaaagtaca	attatcttaa	cactgcaaac	atnttttnaa	300
ggaaactaaa	taaaaaaaa	cactnccgca	aagggttaag	ggaacaacaa	attcntttta	360



```

caacancnnc nattataaaa atcatatctc aaatcttagg ggaatataca cttcacacng 420
ggatcttaac ttttactnca ctttggttat tttttanaa ccattgtntt gggcccaaca 480
caatggnaat nccnccnncn tggactagt 509

```

```

<210> 203
<211> 583
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc feature
<222> (1)...(583)
<223> n = A, T, C or G

```

```

<400> 203
tttltttttt ttttttttga cccccctott ataaaaaaca agttaccatt ttattttact 60
tacacatatt ttttttataa ttggtattag atattcaaaa ggcagctttt aaaatcaaac 120
taaattggaa ctgcottaga tacataattc tttaggaatta gcttaaaatc tgcotaaagt 180
gaaatcttc tctagctctt ttgactgtaa atttttgact cttgtaaaac atccaaattc 240
atttttcttg tctttaaaat tatctaact ttccattttt tccctattcc aagtcaattt 300
gcttctctag cctcatttcc tagctcttat ctactattag taagtggctt ttttctaaa 360
agggaaaaca ggaagagana atggcacaca aaacaaacat ttttatattc tttttctacc 420
tacgttaata aaatagcatt ttgtgaagcc agtcacaaag aaggcttaga tccctttatg 480
tcatttttag tcaactaaac atatcnaaag tgcacgaatg caaaaggttt gtgaacattt 540
attcaaaagc taatataaga tatttcacat actcalcttt ctg 583

```

```

<210> 204
<211> 589
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc feature
<222> (1)...(589)
<223> n = A, T, C or G

```

```

<400> 204
ttttttttnt tttttttttt ttttttncct ttcttttttt ttganaatga ggcctgaatt 60
tttcaactct tagatagggc atgaagaaaa clcatcttcc cagctttaa alaaatcaa 120
aatctcttat gcttatctct atlttaagll aaactaatga gtcactggct tatcttctcc 180
tgaaggaaat ctgttcaatc ttctcattca tatgttata tcaagtacta ccttgcatat 240
tgaaggllt tloctctcta tttaacacata tatttccatg tgaatttgta tcaaaccttt 300
atlttcatgc aaactagaas ataattgtnt cttttgcata agagaagaga acaatatnag 360
catttcaaaa ctgctcaaat tgtttgttaa gnttatccat tataattagt tnggcaggag 420
ctaatacaaa tcacattttac ngacnagcaa taataaaact gaagtaccag ttaaatatcc 480
aaaataatta aaggaacatt tttagcctgg gtataattag ctaattcact ttacaagcat 540
ttattnagaa tgaattcaca tgttattatt ccttagccca acacaatgg 589

```

```

<210> 205
<211> 545
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc feature
<222> (1)...(545)
<223> n = A, T, C or G

```

```

<400> 205
tttttttttt ttttttcaag aataatcaaa acaatattta tttttakatt taaaatlnat 60
agaaaagtgc cttacatttc ataaaagttt glltctcaaa gtgatcagag gaattageta 120
tngtcttcaa ccccaatatt aatttgagga aatatacca aatatatta agtaattat 180

```

ttaagatcat	agagcttcta	agtgaaga	taaaatttga	cctcagaaac	tctgagcatt	240
aaaaatccac	tattagcaaa	taaattacta	tggacttctt	gctttaaatt	tgtgatgaat	300
atggggtgtc	actggtaaac	caacacattc	tgaaggctac	attacttagt	gatagattct	360
tatgtacttt	gctanataac	gtggatatga	gttgacaaagt	ttctctttct	tcaatctttt	420
aaggggcnga	ngaaatgagg	aagaaaaaga	aaggattacg	catactgttc	tttctatnng	480
aaggattaga	tatgtttctt	ttgccaatct	taaaaaaala	ataatgttta	ctactagtga	540
aaccc						545

&lt;210&gt; 206

&lt;211&gt; 487

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(487)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 206

tttttttttt	tttttagtc	aagtttctna	tttttattat	aattaaagtc	ttggtcattt	60
catttattag	ctctgcaact	tacatatctt	aattaaagaa	acgttnttag	acnactgtna	120
caattttata	atgtaagggt	ccattattga	gtanatatat	tcctccaaga	gtggatgtgt	180
cccttctccc	accaactaat	gaancagcaa	catttagttta	attttattag	tagalnatac	240
actgctgcaa	acgttaattc	tcttctccat	ccccatgtug	atattglgta	latgtgtgag	300
ttggtnagaa	tgcatacanca	atctnacaat	caacagcaag	aiqaagctag	gcntgggctt	360
tcgggtgaaa	tagactgtgt	ctgtctgaat	caaatgatct	gacctatcct	cgggtggcaag	420
aactcttcga	accgcttctt	caaggcngc	tgcacacttt	gtggcntctn	ttgcacttgt	480
ttcaaaa						487

&lt;210&gt; 207

&lt;211&gt; 332

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(332)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 207

tgaattggct	aaaagactgc	atttttanaa	ctagcaactc	ttatttcttt	cctttaaaaa	60
tacataguat	taaatcccaa	atcctattta	aagacctgac	agcttgagaa	ggctactact	120
gcattttatg	gaccttctgg	tggttctgct	gttacttttg	aantctgaca	atccttgana	180
atcttlgcct	gcagaggagg	taaaagggtat	tggattttca	cagagggaana	acacagcgca	240
gaaatgaagg	ggccaggctt	actgagcttg	tccactggag	ggctcatggg	tgggacatgg	300
aaaagaaggc	agcctaggcc	ctggggagcc	ca			332

&lt;210&gt; 208

&lt;211&gt; 524

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(524)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 208

agggcgtggt	guggagggcg	ttactqltll	gtctnagtaa	caataaatac	aaaagactg	60
gttgtgttcc	qccccatcc	aaccacgaag	ttgatttctc	ttgtgtgcag	agtgactgat	120
tttaaggqac	atggagcttg	tcacaatgtc	acaatgtcac	agtgtgaagg	gcacactcac	180
tccgcqlqra	llcaaatlta	gcaaccacaa	atagctcatg	agtcacatact	tgtaaatact	240

tttggcagaa	tacttnttga	aacttgcaga	tgataactaa	gatccaagat	atttcccaaa	300
gtaaatagaa	gtgggtcata	atattaatta	ccgtgttcac	tcagcttcca	tttacaagtc	360
atgagcccag	acactgacat	caaaactaagc	ccacttagac	tctcaccac	cagtctgtcc	420
tgtcatcaga	caggaggtg	tcaccttgac	caaattctca	ccagtcnate	atctatccaa	480
aaaccattac	ctgatccact	tccggtaatg	caccacettg	glga		524

<210> 209  
 <211> 159  
 <212> DNA  
 <213> Homo sapien

gggtgaggaa	atccagagtt	gccatggaga	aaattccagt	gtcagcattc	ttgctcettg	60
tggcctctc	ctcactctg	gccagagata	ccacagtcaa	acctggagcc	aaaaaggaca	120
caasggactc	tcgacccaaa	ctgccccaga	ccctctcca			159

<210> 210  
 <211> 256  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(256)  
 <223> n = A,T,C or G

actccctggc	agacaaaagg	agagggagag	gctctgttag	lletgtgttg	ttgaactgcc	60
actgaatllc	tttccacttg	gactattaca	tgccanttga	gggactaatg	gaanaacgta	120
tggggagall	ttanccaatl	langtntgta	aatggggaga	ctggggcagg	cgggagagel	180
ttgcagggtg	naaatgggan	ggctggtttg	ttanatgaac	agggacatag	gaggtaggca	240
ccaggatgct	aatca					256

<210> 211  
 <211> 264  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(264)  
 <223> n = A,T,C or G

acattgtttt	tttgagataa	agcattgaga	gagctctcct	taacgtgaca	caatggaggg	60
actggaacac	ataccacat	cttgtttctg	agggataatt	ttctgataaa	gtcttgtctg	120
atattcaagc	acatatgta	tatattattc	agttccatgt	ttatagccta	gttaaggaga	180
ggggagatac	attcngaaag	aggactgaaa	gaaatactca	agtnggaaaa	cagaaaaaga	240
aaaaaaggag	caaatgagaa	gcct				264

<210> 212  
 <211> 328  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(328)  
 <223> n = A,T,C or G

acccaaaaat	ccaatgctga	atatttggct	tcattattcc	caattcttt	galtqlcaaa	60
------------	------------	------------	------------	-----------	------------	----

ggatttaatg	ttgtctcagc	ttgggcactt	cagttaggac	ctaaggatgc	cagccggcag	120
gtttatatat	gcagcaacaa	tattcaagcg	cgacaacagg	ttattgaact	tgcccgccag	180
tttaatttca	ttcccatiga	cttgggatcc	ttatcatcag	ccagagagat	tgaaaattta	240
ccoctacnac	tctttactct	ctgganaggg	ccagtgggtg	tagctataag	cttggccaca	300
tttttttttc	ctttattcct	ttgtccaga				328

&lt;210&gt; 213

&lt;211&gt; 250

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(250)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 213

acttatgagc	agagcgacat	atccnagtgt	agactgbata	aaactgaatt	ctctccagtt	60
taaagcattg	ctcactgaag	ggatagaagt	gactgccagg	agggaaagta	agccaaggct	120
cattatgcca	aagganatat	acatttcaat	tctccaaact	tcttctcat	tccaagagtt	180
ttcaatattt	gcatgaacct	gctgataanc	catgttaana	aacaaatata	tctctnacct	240
tctcatcggt						250

&lt;210&gt; 214

&lt;211&gt; 444

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(444)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 214

accagaatc	caatgctgaa	tatttggett	cattattccc	agattctttg	attgtcaaag	60
gatttaatgt	tgtctcagct	tgggcacttc	agttaggacc	taaggatgcc	agccggcagg	120
tttatatatg	cagcaacaat	attcaagcgc	gacaacagg	tattgaactt	gcccggccagt	180
tgaatttcat	tcccatigac	ttgggatcct	tatcatcagc	canagagatt	gaaaattttac	240
ccctaagact	cttctactct	tggagagggc	cagtgggtgt	agctataagc	ttggccacat	300
ttttttttcc	ttttattcct	tgtcagagat	gcgattcata	catatgctan	aaaccaacag	360
agtgaacttt	acaaaattcc	tataganatt	gtgaataaaa	cottacctat	agttgccatt	420
actttgtctc	ccctaataata	cctc				444

&lt;210&gt; 215

&lt;211&gt; 366

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(366)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 215

acttatgagc	agagcgacat	atccaagtgt	anactgaata	aaactgaatt	ctctccagtt	60
taaagcattg	ctcactgaag	ggatagaagt	gactgccagg	agggaaagta	agccaaggct	120
cattatgcca	aagganatat	acatttcaat	tctccaaact	tcttctcat	tccaagagtt	180
ttcaatattt	gcatgaacct	gctgataagc	catgttgaga	aacaaatata	tctctgacct	240
tctcatcggt	aagcagaggg	tgtaggcaac	atggaccata	gogaenaaaa	aacttagtaa	300
tccaagctgt	tttctacact	gtaaccagg	ttccaaccaa	ggtggaate	tcotataact	360
ggtgcc						366

<210> 216  
 <211> 260  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(260)  
 <223> n = A,T,C or G

<400> 216  
 ctgtataaac agaactccau tgcangaggg agggccgggc caggagaate cccgcttctc 60  
 caagacaggg gactaaggag ggtctccaca ctgclnntaa gggctnttnc atttctttat 120  
 taataaaaag tnnaaaaggc ctcttclcaa ctttttctcc ttnggclggg aaatctaaaa 180  
 atcaaaaatt tectnaagtl ntcaagctat catactata ntatcctgas aaagcaaat 240  
 aatcttctct tccctcttt 260

<210> 217  
 <211> 262  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(262)  
 <223> n = A,T,C or G

<400> 217  
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 tcttgcctot aattttctat tttaataagg aaatgcana ttggggtggg gggaaagag 120  
 ggcattctac agtttgagca aaatgcaatt aaatgtggaa ggacagcact gaasaatttt 180  
 atgaataatc tglatgatte tatgctctta gagtagatt ataattagcc acttacccta 240  
 atatcttcca tgcttgtaaa gt 262

<210> 218  
 <211> 205  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(205)  
 <223> n = A,T,C or G

<400> 218  
 acaaggttg tgcattaccg gaantggatc aaggacacca tcttggtcca cccctgagca 60  
 cccclatcaa ctcccctttg taglaaactt ggaaccllga aaatgaccag gccaagactc 120  
 aggcctccc agttctactg acctttgtcc ttangtntna nglccagggt tgctaggaaa 180  
 anaatcagc agacacaggt gtaaa 205

<210> 219  
 <211> 114  
 <212> DNA  
 <213> Homo sapien

<400> 219  
 tactgttttg tctcagtaac aataaatata aaaagactgg ttgtgttccg gcccatcca 60  
 accacgaagt tgatttctct tgtgtgcaga gtgactgatt ttaaaggaca tggg 114

<210> 220  
 <211> 93  
 <212> DNA

<213> Homo sapien

<400> 220

actagccagc acnaaaggca gggtagcctg aattgcttcc tgcctcttac atttccltta 60  
aaataagcat ttagtgcctc gtcctactct agt 93

<210> 221

<211> 167

<212> DNA

<213> Homo sapien

<220>

<221> misc\_feature

<222> {1}...{167}

<223> n = A,T,C or G

<400> 221

actanqtgca ggtgcgcaca aatatttgtc gatattccct tcatcttga ttccatgagg 60  
tcttttgccc agcctgtggc tctactgtag taagtctctg ctgatgagga gccagnatgc 120  
ccccactac cttccctgac gctccccaana aatcacccaa cctctgt 167

<210> 222

<211> 351

<212> DNA

<213> Homo sapien

<400> 222

agggcgtggt ggcggaggcg gtactgacct cattagtaag aggatgcatt ctggcaccoc 60  
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atgttttctg nattnaaagga tggatgaaaa aaattcaaaa tgaallttttg cataatccaa 180  
ttttctcttt tatatttcta gaagaagttt ctttgagcct attagatccc gggaatcttt 240  
taggtgagca tgattagaga gcttgtagggt tgtttttaca tatatctggc atatttgagt 300  
ctcgtatcaa aacaatagat tggtaaaagg ggtattattg tattgataag t 351

<210> 223

<211> 383

<212> DNA

<213> Homo sapien

<220>

<221> misc\_feature

<222> {1}...{383}

<223> n = A,T,C or G

<400> 223

aaaaaacaac aacaaaaaaa acaattcttc attcagaaaa attatcttag ggactgatat 60  
tggtaallat ggtcaattta atwrtxttk ggggcatttc cttaacattgt ctgacaaga 120  
ttaaatgtc tgtgccaaaa ttttgtattt tatttgagga ctcttatca aaagtaatgc 180  
lgccaaagga agtctaagga attagtagtg ttccmctcac ttgtttggag tgtgctatc 240  
taaaagattt tgatttcctg gaatgacaat tatattttaa ctttggtggg ggaaanagtt 300  
ataggaccac agtcttcact totgatactt gtaaatatatt cttttattgc acttgctttg 360  
accattaagc tatatgitta aaa 383

<210> 224

<211> 320

<212> DNA

<213> Homo sapi n

<400> 224

ccctgaagg cttcttggtt gaaaatagta cagttacaac caatayggac aacaaaaaga 60  
aaaagtttgt gacattgtag tagggagtgat gtacccctta cccccatca aaaaaaaat 120  
ggatacatgg ttaaaaggata raagggcact atillatcat atglt.ctaaa agagaaygaa 180

gagaaatatac	tactttctcr	aatggaagc	oottaaaaggt	gctttgatac	tgaaggacac	240
aatgtggcc	gtccatctc	ctttaragtt	gcattgacttg	gacacggtaa	ctgttgcaqt	300
tttaractcm	gcattgtgac					320

<210> 225  
 <211> 1214  
 <212> DNA  
 <213> Homo sapien

<400> 225						
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aaetnctaca	ccatcggggt	gggectgcac	agtccttgagg	ccgaccaaga	gccagggagc	180
cagatgggtg	agggcagcct	ctccgtacgg	cacccagagt	acaacagacc	cttgctcgct	240
aacgacctca	tgctcatcaa	gttggacgaa	tccgtgtccg	agtctgacac	catccggagc	300
atcagcattg	cttcgcagtg	ccctaccggg	gggaactctt	gcctcgtttc	tggtgggggt	360
ctgctggcga	acggcagaa	gcctaccgtg	ctgcagtgcg	tgaacgtgtc	gggtggtgtc	420
gaggaggtct	gcagtaagct	ctatgaccgg	ctgtaccacc	ccagcatgtt	ctgcgcgggc	480
ggagggcaag	accagaagga	ctcctgcaac	gggtgactctg	gggggcccct	gatctgcaac	540
gggtactttg	agggccttgt	gtctttcgga	aaagcccctg	gtggccaagt	tggcgtgcca	600
ggtgtctaca	ccaccctctg	caaatctact	gagtggatag	agaaaacctt	ccaggccagt	660
taactctggg	gactgggaac	ccatgaaatt	gacccccaaa	tacatcctgc	ggaagggaatt	720
caggaatafc	tgttccagc	ccctcctccc	tcaggcccgag	gagtcacagg	ccccagcccc	780
tcctccctca	aaaccaagggt	acagatcccc	agccccctct	ccctcagacc	caggagtcca	840
gacccccag	ccctcctccc	ctcagaccca	ggagtccagg	ccctcctccc	tcagacccag	900
gagtcagac	ccccagccc	ctcctcctcc	agaccccagg	gtccaggccc	ccacccctcc	960
ctccctcaga	ctcagaggtc	caagcucccc	acccctcctt	cccccagccc	agagggtccag	1020
gtcccaqccc	ctcctcctcc	agaccccagg	gtccaatgccc	acccagactc	tcctctgacc	1080
caqtgcccgc	ttgtgggacg	ilgacccaac	cttaccaggtt	ggtttttcat	tttttctccc	1140
tttcccctag	alccagaaat	aaagtctaa	agagcgccaa	aaaaaaabaa	aaaaaaaaaa	1200
aaaaaaaaaa	aaaa					1214

<210> 226  
 <211> 119  
 <212> DNA  
 <213> Homo sapien

<400> 226						
accuagfatg	tgcaggagga	cgggaacccc	tgtgacagcc	cactccacca	gggttcccac	60
agaaacclqgc	ccagtcataa	tcaattcctc	tgaacgtggc	aaataatcag	ataaccagt	119

<210> 227  
 <211> 818  
 <212> DNA  
 <213> Homo sapien

<400> 227						
acaattcata	gggacgacca	atgaggacag	ggaatgaacc	cggtctctcc	ccagccctga	60
tttttgetac	atatgggggc	ctttttcatt	ctttgcaaaa	acactgggtt	ttctgagAAC	120
acggacgggt	cttagcaca	tttgtgaat	ctgtgtaraa	ccgggctttg	caggggagat	180
aattttccct	ctctggagga	aaggtgggtg	ttgacaggca	gggagacagt	gacaaggcta	240
gagaaagcca	cgtctggcct	tctctgaacc	aggatgggac	ggcagacccc	tgaaaaccga	300
gcttgccccc	ttccaatcag	ccacttctga	gaaccccctt	ctaacttccc	actggaaaag	360
agggcctcct	caggagcagt	ccaagagttt	tcaagatata	cgtgacaaat	accatctaga	420
ggaaagggtg	ccccctcagc	agagagggcc	agagcttaac	tctggtcgtt	tccagagaca	480
acctgctggc	tgctctggga	tgcgcccagc	ctttgagagg	ccactacccc	atgaacttct	540
gccatccact	ggauatgaag	ctgagggccc	tgggcttcaa	ccctgaqltg	tcatgagagg	600
gacaggctct	gcctctcagc	gggclgaggg	cagcaaccac	tcctcctccc	ttctctcagg	660
aaagcuattc	ccacaaatcc	agacnatacc	atgagggccc	ggagccccaa	cagtllygct	720
caagaggaal	tgaggactgt	ctcagcctgg	ctttgggctg	acacccatgc	cacacaaag	780
gtccacttct	aggttttcag	cctagatggg	agtcgtgt			818

<210> 228  
 <211> 744  
 <212> DNA  
 <213> Homo sapien

<400> 228  
 actggagaca ctgttgaact tgatcaagac ccagaccacc ccaggtctcc ttctgtggat 60  
 gtcatgaagt ttgacatacc ttggaacga gccctcctct tggagatgg aagaccgtgt 120  
 tctgtggcga cctggcctct cctggcctgt ttcttaagat gaggagtcac atttcaatgg 180  
 taggaasagt ggcttcgtaa aatagaagag cagtcactgt ggaactacca aatggcgaga 240  
 tctcgggtgc acattggggg gctttgggat aaaagattta tgagccaact attctctggc 300  
 accagattct aggcagttt gttccactga agcttttccc acagcagtc accctctgcag 360  
 gctggcagct gaatggcttg ccggtggctc tgtggcaaga tccactgag atcgatgagt 420  
 gagaaggcta ggatgcttgc ctagtgttct tagctgtcac gttggctcct tccaggttgg 480  
 ccagacgggtg ttggccaact ccttctazaa cacaggcgcc ctctctggtg cagtgaaccg 540  
 ccgtggatg ccttggccca ttccaycagt cccagttatg ctttccaggt ttggggcttg 600  
 ttcttttctg taatgttctc ctgtgllgtc agctgtcttc alttcctggg ctacgcagca 660  
 ttgggagatg tggccagag atccactct taagaccag tggcgaaaga cactttcttt 720  
 ctccactctg aagtagctgg tggc 744

<210> 229  
 <211> 300  
 <212> DNA  
 <213> Homo sapien

<400> 229  
 cgagtctggg ttttgtctat aaagtttgat cctcctttt ctcatccaaa tcatgtgaac 60  
 cattacacat cgaataaaaa gaaaggtggc agacttggcc aacgccagge tgacatgtgc 120  
 tgcagggttg ttgttttta attattattg ttagaaacgt caccacaggt cctgtttaat 180  
 ttgtatgtga cagccaactc tgagaaggtc ctatttttcc acctgcagag gatccagtct 240  
 cactaggctc ctcttggccc tccacttggg gtctccagca gtgtgggtgc ccactgacat 300

<210> 230  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<400> 230  
 cagcagaaca aatacaata tgaagagtgc aaagatctca taaaatctat gctgagggaat 60  
 gagcgacagt tcaaggagga gaagcttgca gagcagctca agcaagctga ggagctcagg 120  
 caatataaag tcttgggtca cactcaggaa cgagagctga ccaggttaag ggagaagttg 180  
 cgggaaggga gagatgcctc cctctcattg aatgagcatc tccaggccct cctcactccg 240  
 gatgaaccgg acaagtccca ggggcaggac ctccaagaaa cagacctcgg ccgcgaccac 300  
 g 301

<210> 231  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<400> 231  
 qcaagcaccg tggcaaatct clgtcaggtc agctccagag aagccattag tcatcttagc 60  
 cagggaactcc aagtcacacat ccttggcaac tggggacttg cgcagggttag ccttgaggat 120  
 qgcacacagg gacttctcat cagggaagtg gatgtagatg agctgatcaa gacggccagg 180  
 tctgaggatg gcaggatcaa tgatgtcagg ccggttggta ccgccaatga tgaacacatt 240  
 Lttttttgtg gacatgccat ccatttctgt caggatctgg ttgatgactc ggtcagcagc 300  
 c 301

<210> 232  
 <211> 301  
 <212> DNA  
 <213> Homo sapien



75

<400> 232  
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 ggcgacagcg gggcttctcg attctggaat ataactttgt gtaaattaac agccacctat 120  
 agaagagtcg atctgtctgt aaggagagac agagaactct gggttccgtc gtctgttcca 180  
 cgtgtctgtac caagtgtctg tgcacgctcg ttacctgttc tcaactgaaa tctggctaatt 240  
 gctcttgtgt atcaacttctg attctgacaa tcaatcaatc aatggcctag agcaactgact 300  
 g 301

<210> 233  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<400> 233  
 atgactgact tccnagtaag gctctctaaag gggttaagta gaggatccac aggalttgag 60  
 atgcttaaggc cccagagatc gtttgetcca accctcttat ttccagaggg gaaatgggg 120  
 notagaagtt acagagcacc tagctgggtg gctggcacc cctggcctcac acagactccc 180  
 gagtgtctgg gactacaggc acacagtcac tgaagcaggc cctgttagca attctatgag 240  
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 c 301

<210> 234  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<400> 234  
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 catcttcttc atcagatgc ttctctctct tctctctctt cgtctctctt lctctctctt 120  
 tctctctctc caacatactt ctcaallctt ccaggcttta aaatcttgag ggattgatct 180  
 cgcctcatga cagcaagttc aatgtttttg ccacctgact gaaccacttc caggagtgc 240  
 ttgatccca gcttaatggt cagatcatct gcttcaatgg ctctgtcagt atagtctctc 300  
 t 301

<210> 235  
 <211> 283  
 <212> DNA  
 <213> Homo sapien

<400> 235  
 tggggctgtg catcaggcgg gtttgagaaa tattcaatc tcagcagaag ccagaatttg 60  
 aattccctca tcttttaggg aatcatttac cagggtttgg gaggattcag acagctcagg 120  
 tgctttcact aatgtctctg aacttctgtc cctctttgtl catggatagt ccaataaata 180  
 atgttatctt tgaaclgatg ctcataggag aqaatataag aacclctgagt gatataaca 240  
 ttagggatcc aaagaatat cagalltaaq ctcaactgg tca 283

<210> 236  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<400> 236  
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 aatactttta aatcgatcag atttccctaa cccacatgca atcttcttca ccagaagagg 120  
 tggagragc atcathtaata ccaagcagaa tgcgtaatag ataaatacaa tgggtatata 180  
 tgggttagac gcttcatgag tacagtgtac tgtggtatcg taatctggac ttgggttgta 240  
 aagcatcgtg taccagtcag aaagcatcaa tactcgacat gaacgaatat aaagaacacc 300  
 a 301

<210> 237  
 <211> 301

76

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 237

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actcaatttt	tgttcgctcc	tttttggcct	tttccaattt	gtccatctca	attttctggg	120
cottggctaa	tgccctcatag	taggagtcct	cagaccagcc	atggggatca	aacatatect	180
ttgggtagtt	ggtgccnagc	tgtcaatgg	cacagaatgg	atcagcttct	cgtaaatcta	240
gggttcggaa	attctttctt	cctttggata	algiagttca	tatccattcc	ctcctttatc	300
t						301

&lt;210&gt; 238

&lt;211&gt; 301

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 238

gggcagggtt	tttttttttt	ttttttgatg	gtgcagaccc	ttgctttatt	tgtctgactt	60
gttcacagtt	cagccrcttg	ctcagaaaac	caacggggca	gctaaggaga	ggaggaggca	120
ccttgagact	tccggagtcg	aggtctctca	gggttcccc	gcccataaat	cattttctgc	180
acccctgac	tgggaagcag	ctccctgggg	ggtgggaatg	ggtgactaga	agggatttca	240
gtgtgggacc	cagggtctgt	tcttcacagt	aggagggtga	agggatgact	aatttcttta	300
t						301

&lt;210&gt; 239

&lt;211&gt; 239

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 239

alaagcagct	agggaattct	ttatttagta	atgtcctaac	ataaaagtgc	acstaactgc	60
ttctgtcaca	ccatgatact	gagctttgtg	acaaccaga	aataactaag	agaaggcaaa	120
cataatacct	tagagatcaa	gaacattta	cacagttcaa	ctgtttaaaa	atagctcaac	180
attcagccag	tgahtagagt	gtgaatgcca	gcatacacag	tatacaggtc	cttcaggga	239

&lt;210&gt; 240

&lt;211&gt; 300

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 240

ggtcctaatt	aagcagcagc	ttccacattt	taacgcaggt	ttacgggtgt	actgtccttt	60
gggatctgcc	ctccagtgg	accttttaag	gangaagtgg	gcccagagta	agttccacat	120
gctgggtgag	ccagatgaat	tctgttccct	gglcacttct	ttcattgggg	cgaalggggg	180
ctgccaggtt	tttaaaatca	tgcttcatct	tgaagcaca	ggtcaattca	ccctcctcac	240
gctglgggtg	tactttgatg	aaaataccca	ccttgtttgg	ctttctgaag	ctataatgtc	300

&lt;210&gt; 241

&lt;211&gt; 301

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 241

gaggtctggt	gctgaggtct	ctgggctagg	aagaggagtt	ctgtggagct	ggaagccaga	60
cctcttttga	ggaaactcca	gcagctatgt	tgggtgtctt	gaggggaatg	aacaaggctg	120
ctcctccatg	tattggaaaa	ctgcaaaactg	gactcaactg	gaagggaagt	ctgctgccag	180
tgtgaagaac	cagcctgagg	tgaagaaac	ggaagcaaac	aggaaacagc	agctttttct	240
tcctcctcct	gtcatacggg	ctctctcaag	catcctttgt	tgtcaggggc	ctaaaaggga	300
g						301

&lt;210&gt; 242

&lt;211&gt; 301

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 242

ccgagggtcct	gggatgcaac	caatcaactct	gtttcacgtg	acttttcatca	ccatacaatt	60
tgtggcatttt	cctcatttttc	tacattgtag	aatcaagagt	gtaaataaat	gtatatcgat	120
gtcttcaaga	atatatcatt	cottttttcac	tagaacccat	tcaaaatata	agtcaagaat	180
cttaatatca	acaaatata	caagcaact	ggaaggcaga	ataactacca	taatttagta	240
taagtaccca	aagttttata	aatcaaaaagc	cctaattgata	accattttta	gaattcaatc	300
a						301

&lt;210&gt; 243

&lt;211&gt; 301

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 243

aggtaagtc	cagtttgaag	clcaaaagat	ctggatagag	catagggtca	togacgacat	60
gytggcccaa	gctatgaaat	cagagggagg	cttcctctgg	gcctgtaaaa	actatgatgg	120
tgacgtgcag	toggactctg	lqgcccagg	gtatggctct	ctcggcatga	tgacgagcgt	180
qctggtttql	ccagatggca	agacagtaga	agcagaggct	gcccacggga	ctgtaacccg	240
tcactaccgc	atgttccaga	aaggacagga	gacgtccacc	aatcccatg	cttccatttt	300
t						301

&lt;210&gt; 244

&lt;211&gt; 300

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 244

gctggtttgc	aagatgaa	lgaatgatto	tacagctagg	acttaacott	gaaatggaaa	60
gtcatgcaat	cccatttqca	qgactgtct	gtacacatgc	ctctgtagag	agcagcattc	120
ccagggaaccl	tggaacagt	tgacac:lgta	aggtgcttgc	tccccaagac	acatcctaaa	180
aggcttttgt	atggtgaaaa	ngtcttactc	ctttattgoc	ctttcttatl	tatgtgaaca	240
actgtttgic	ttttgtgcat	ctttttttaa	ctgtaaagtt	caaltg:qaa	aatggaatc	300

&lt;210&gt; 245

&lt;211&gt; 301

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 245

gtctgagtat	ttaaaatggt	attgaaatta	tccccaacca	atgttagaaa	agaaagaggt	60
tatatactta	gataaaaaat	gagggtgaatt	actatocatt	gaaatcatgc	tcttagaatt	120
aaggccagga	gatattgtca	ttaattgtara	cttcaggaca	ctagagtata	gaagccctat	180
gttttcaaag	agcagagatg	caattaaata	ttgttttagca	tcaaaaaggc	cactcaatac	240
agctaataaa	atgaagaacc	taattttctaa	agcaattcct	tataatttac	aaagttttca	300
g						301

&lt;210&gt; 246

&lt;211&gt; 301

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 246

ggtctgtcct	acaatgcctg	cttcttgaaa	gaagtcggca	ctttctagaa	tagctaaata	60
acctgggctt	attttaaaga	actattttgt	gtcagattg	gttttctt	ggclaaata	120
gtgcttctt	gtgaaaatta	aataaaacag	ttaattcaaa	gccttgatat	atgtaccac	180
taacaatcat	actaaatata	ttttgaagta	caaagtttga	catgctctaa	agtgacaacc	240
caaagtgtgc	ttacaaaaca	cgttcctaac	aagggtatgct	ttacactacc	aatgcagaaa	300
c						301

78

<210> 247  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<400> 247  
 aggtcctttg gcagggtcca tggatcagag ctcaactcgg agggaaaggc atttcgggta 60  
 gectaaaggg gcgactggcg gcagucacac cuaggaaaggc aagggttggtt cccccacgct 120  
 gctcctgttg ttcagggtgg gcacacacac ctcatgggaa caggatcacc catgcgctgc 180  
 ccttgatgat caagggttgg gcttaagtggt attaagggag gcaagttctg ggttccttgc 240  
 cttttcaaac catgaagtcg ggcctctgat cctcctttt cctaactgat attctaacta 300  
 a 301

<210> 248  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<400> 248  
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 attaggaaga ttcttagggg taatttttct gaggaaggag aactagccca cttuagaatt 120  
 acagggaaga agtggttttg aagacagcca aagaataaaa agcagattaa attgtatcag 180  
 gtacattcca gctgtttggc aactccataa aaacatttca gattttaato ccgaatttag 240  
 ctatgagac tggatttttg ttttttatgt tgtgtgtcgc agagctaaaa actcagttcc 300  
 c 301

<210> 249  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<400> 249  
 gtccagagga agcacctggg gctgaactag gcttgccctg ctgtgaactt gcaattggag 60  
 cctgacgct gctgttctcc ccgaaaaacc cgaccgacct ccgggctctc cgtcccgccc 120  
 ccaggagagc acagcagtg ctcagagctg gtgcacact gtgctccct cctcaccgcc 180  
 catgtaatg aattattttg aaaattaatt ccaccatcct ttcagattct ggaaggaaag 240  
 actgaatctt tgactcagaa ttgtttgctg aaaagaatga tgtgacttct ttagtcaatt 300  
 a 301

<210> 250  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<400> 250  
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 ctatcttta ttggttgat aaacataatt atttctaaac ctgcttatt tccagttgcc 120  
 cataagcaca tcagtacttt tctctggctg gaatagttaa cttaagtatg gtacatctac 180  
 ctaaaagact actatgtgga ataatacata ctaatgaagt attacatgat ttaagacta 240  
 caataaaacc aaacatgctt ataacattaa gaaaaacaat aaagctacct gattgaacc 300  
 a 301

<210> 251  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<400> 251  
 gcagaggtcc tacatttggc ccagtttccc cctgcattct ctccagggcc cctgcctcat 60  
 agacacacct atagagcata ggaggaactgg ttgcccctgg ggcaggggga ctgtctggat 120  
 ggcaggggtc ctcaaaatg ccaatgtcac tgccaggaaa tgcttctgag cagtacacct 180  
 ccttgggalc aatgaaaagc ttcagaaat cttcaggctc actctcttga aggcccgaa 240

cctctggagg ggggcagtg aatcccagct ccaggacgga tctgtcgaa aagatatcct 300  
c 301

<210> 252  
<211> 301  
<212> DNA  
<213> Homo sapien

<400> 252  
gcaaccnate actctgtttc acgtgacttt tateaccata caatttggtg catttcccca 60  
ttttctacat tgtagaatca agagtgtana taaatgtata tcatgtcttt caaguatata 120  
tcattccctt ttcactagga acccattcna aatataugtc aaqaatctta atatcaacaa 180  
atatatcaag caaactggaa ggcagatna claccataat ttagtataag taccuuaagt 240  
tttataaate aaaagcccta alqataacca tttttagaat tcaatcaca ctgtagaate 300  
a 301

<210> 253  
<211> 301  
<212> DNA  
<213> Homo sapien

<400> 253  
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caactaaaaa aaaaaaataa agaaaaaatg tgcctgcgtt tgaaaaataa ctcccttagct 120  
tggtctgatt gttttcagac cttaaaatac aaacttggtt cacaagcttt aatccatgtg 180  
gatttttttt cttagagaac cacaaaacet aaaaggagca agtcggactg aatacctgtt 240  
tccatagtgc ccacagggtt ttcttcacat tttctcata ggaaaatgct ttttcccaag 300  
g 301

<210> 254  
<211> 301  
<212> DNA  
<213> Homo sapien

<400> 254  
cgctgcgect ttcccttggg ggagggggcaa ggccagaggg ggtccaagtg cagcaacgagg 60  
aacttgacca attcccttga agcgggtggg ttaaaccctg taaatgggaa caaaatcccc 120  
ccaaatctct tcatcttacc ctggtggact cctgactgta gaattttttg gttgaaacaa 180  
gaaaaaata aagcttttga cttttcaagg ttgcttaaca ggtactgaaa gactggcctc 240  
acttaaaactg agccaggaaa agctgcagat ttattaatgg gtgtgttagt gtgcagtgc 300  
t 301

<210> 255  
<211> 302  
<212> DNA  
<213> Homo sapien

<400> 255  
agcttttttt tttttttttt tttttttttt ttcatnaaaa astagtgtc tttattataa 60  
attactgaaa tgtttctttt ctgaatataa atataaatat gtgcaaagt tgccllqqat 120  
tgggattttt ttgagttctt caagcatctc ctaataccct caagggcctg agtggggggg 180  
eggaaaaagg actggaggtg gaatctttat aaaaaacaag agtgattgag gcagattgtg 240  
aacattatta aaaaacaaga aacaaacaaa aaaatagaga aaaaaccac cccaaacac 300  
aa 302

<210> 256  
<211> 301  
<212> DNA  
<213> Homo sapien

<220>  
<221> misc\_feature

&lt;222&gt; {1}...{301}

&lt;223&gt; n = A, T, C or G

&lt;400&gt; 256

gttccagaaa	acattgaagg	tggcttccca	aagtctaact	agggataccc	cctctagcct	60
aggaccctcc	tcccacacc	tcaatccacc	aaaccatcca	taattgcacc	agataggccc	120
acccccaaaa	gcttggacac	cttgagcaca	cagttatgac	caggacugac	tcatctctat	180
aggcaaatag	ctgctggcaa	actggcatta	cctggtttgt	ggggatgggg	gygcaagtgt	240
gtggcctctc	ggcctgggta	gcaagaacat	tcagggtagg	cctaagttan	tcgtgttagt	300
t						301

&lt;210&gt; 257

&lt;211&gt; 301

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 257

gttgtggagg	aactctgget	tgtctattaa	gtcctactga	ttttcactat	ccccgaatt	60
tcccaccta	ttttgtctt	tcaatatgc	aggccttaga	agaggtctac	ctgcctccag	120
tcttacctag	tccagtctac	ccccggagt	tagaatggcc	atcctgaagt	gaaaagtaat	180
gtcacattac	tcccttcagt	gatttcttgt	agaagtggca	atcctgaat	gccaccaaga	240
tcttaattct	cacatcttta	atcttatctc	ttgactcct	ctttacaccg	gagaaggctc	300
c						301

&lt;210&gt; 258

&lt;211&gt; 301

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; {1}...{301}

&lt;223&gt; n = A, T, C or G

&lt;400&gt; 258

cagcagtagt	agatgccgta	tgccagcacg	cccagcactc	ccaggatcag	caccagcacc	60
agggggccag	ccaccaggcg	cagaagcaag	ataaacagta	ggctcaagac	cagagccacc	120
cccagggcaa	caagaatcca	ataccaggac	tgggcaaaat	cttcaagat	cttaacactg	180
atgtctcggg	cattgaggct	gtcaataana	cgctgatccc	ctgctgtatg	gtggtgtcat	240
tggatgccc	tgggagcgcc	ggtggagtaa	cyttgggtcca	tggaaagcag	cgcccacaac	300
t						301

&lt;210&gt; 259

&lt;211&gt; 301

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; {1}...{301}

&lt;223&gt; n = A, T, C or G

&lt;400&gt; 259

tcatatatgc	aaacaaatgc	agaactangcc	tcaggcagag	actaaaggac	atctcttggg	60
gtgtcctgaa	gtgatttggg	cccctgaggg	cagacaccta	agttaggaatc	ccagtgggaa	120
gcaaagccat	aaggaagccc	aggattcctt	gtgatcagga	agtgggccag	gaaggctctgt	180
tccagctcac	atctcatctg	catgcagcac	ggaccggatg	cgcccaactgg	gtcttggctt	240
ccctcccatc	ttctcaagca	gtgtccttgt	tgagccattt	gcctccttgg	ctccagggtgg	300
c						301

&lt;210&gt; 260

&lt;211&gt; 301

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 260

tttttttttct	ccctaaggaa	aaagaaggaa	caagtctcat	aaacccaat	aagcaatggt	60
aaggtgtctt	aacttgaaa	agattaggag	tcactggllt	acagttata	attgaatgaa	120
agaactgtaa	cagccacagt	tggccatttc	atgccaatgg	cagcaacaa	caggattaac	180
tagggcaaaa	taaatcgtg	tgtagaagcc	ctgataagtg	cttcataaac	agactgaltc	240
actgagcat	caglacctgc	cggggcggcc	gclcgagccg	aattctgcag	atatccatca	300

c

301

&lt;210&gt; 261

&lt;211&gt; 301

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 261

aatatttcca	gcaaatcctg	taactaatgt	gtctccataa	aaggctttga	actcagtga	60
tctgcttcca	tccacgattc	tagcaatgac	ctctcggaca	tcaaagctcc	tcttaagggt	120
agcaccaaat	attccatata	attcatcagc	aggaaataaa	ggctcttcag	aaggttcaat	180
ggtgacatcc	aattttcttct	gataatttag	attcctcaca	accttctag	ttaagtgaag	240
ggcatgatga	tcatacaaa	cccagtggtc	acttaactca	gactttctgc	aatgaagatc	300

a

301

&lt;210&gt; 262

&lt;211&gt; 301

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 262

gaggagagcc	tggtacagca	tttgtaagca	cagaatactc	caggagtatt	tgtaattgtc	60
tgtgagcttc	ttgcgcgaag	tctctcagaa	atttaaaaag	atgcaaatcc	ctgagtcacc	120
cctagacttc	ctaaaccaga	tcctctgggg	ctggaacctg	gcactctgca	tttgtaatga	180
gggctttctg	gtgcacacct	aattttgtgc	atctttgccc	taaatcctgg	attagtcccc	240
catcattacc	ccacatttat	aatgggatag	attcagagca	gatactctcc	agcaagaat	300

c

301

&lt;210&gt; 263

&lt;211&gt; 301

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; {1}...{301}

&lt;223&gt; n = A, T, C or G

&lt;400&gt; 263

tttagcttgt	ggtaaatgac	tcacaaaact	gattttaaaa	tcaagttaat	gtgaattttg	60
aaaattacta	cttaattcta	attcacaata	acaatggcat	taaggtttga	cttgagttgg	120
ttcttagtat	tatttatggt	aaataggctc	ttaccacttg	caaataactg	gccacatcat	180
taatgactga	cttcocagta	aggctctcta	aggggtaagt	angaggatcc	acaggatttg	240
agatgctaag	gcccacagaga	tcgtttgata	caacctcttt	attttcagag	gggaaaatgg	300

g

301

&lt;210&gt; 264

&lt;211&gt; 301

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 264

aaagacgtta	aaacactcta	ctaccacttg	tggaaacttc	aaagqgtaaa	tgacaaacc	60
------------	------------	------------	------------	------------	-----------	----

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aatgaatgac tctaaaaaca atatttacat ttatlggtt gtagacaata aaaaaacaag 120
gtggatagat ctggaattgt aacalittaa gaaaaccata scatttgaca gatgagaaag 180
ctcaattata gatgcaaaat tataactaaa ctactatagt agtaaagaaa tacatttcac 240
acccttcata taaattcact abcllggctt gaggcactcc atanaatgta tcacgtgcac 300
a 301

```

<210> 265  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

```

<400> 265
tgcccaagtt atgtgtaagt gtatccgcac ccagaggtaa aactaacctg toacclttgt 60
cttcttgta cgcagtattt ctctctggg gagaagccgg gaagtcttc cctggctcta 120
catattcttg gaagtctcta atcaactttt gtccatttg ttccatttc tcaggagggg 180
tttcagttt gtcaacatgt tctctaaca caactggcca ttctgttaa gsatccaaag 240
cagtcgaagg ctttgacatg tcaacaacca gcataactag agtatcttc agagatacgg 300
c 301

```

<210> 266  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

```

<400> 266
taccgtctgc cttctctcc atccaggcca tctgcgaato tacatgggtc ctctattcg 60
acaccagatc actcltctc ctaccacag gottgctatg agcaagagac acaacctcct 120
ctctctctgc lccagcttc lllcctgtt ctcccaacc cttaagttct attcctggg 180
atagagacac caatcccat aacctctc ctaagctcc ttataacca gggcgacag 240
cacagaotcc tgacaaactg taaggccaat gaactgggag ctacacagclg gctgtgctg 300
a 301

```

<210> 267  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

```

<400> 267
aaagagacaa ggccagctca gctgcccctg gccatctaga ctcagccctg ctccatggg 60
gttclcaagt ctgagtcuat ccaggaaaag ctacactaga cttctgagg ctgaatctc 120
atctcacaag gcagclctg agagcctgat attcctagcc ttgatggct ggagtaange 180
ctcatctg lclctctct lctttctct caagttgggt ttctcact cctctgttc 240
aattcgcttc agcttgclcg cttaagcct catttcaaa agcttctct ctttggcatc 300
t 301

```

<210> 268  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

```

<400> 268
aatgtctcac tcaactact cccagcctac cgtggcctaa ttctgggagt tttcttctta 60
gatcttgga gagctggct ttctaaggag aaggaggaa gacagatgta actttggatc 120
togaagagga agtctaattg aagtaattag tcaacggctc ttgtttagac tcttggaaata 180
tgctgggtg ctcagtgag ccttttgag aaagcaagta ttattcttaa ggagtaacca 240
cttccattg ttctaattc taacatcat aattgtatat tatgtattc ttggagaact 300
a 301

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<210> 269  
 <211> 301  
 <212> DNA  
 <213> Homo sapien



<400> 269  
 taacaatata cactagatat ctttttaact gtccatcatt agcaccaatg aagattcaat 60  
 aasattacct ttattcacac atctcaaaac aattctgcaa attcttagtg aagtttaact 120  
 atagtcacag acottaaata ttacacattgt tttctatgtc tactgaaaat aagttcaacta 180  
 cttttctgga tattctttac aaaatottat taaaattcct ggtattatca cccccaatta 240  
 tacagtagca caaccaacct atgtagtttt tacatgatag ctctgtagaa gtttcaactc 300  
 t 301

<210> 270  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<400> 270  
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 caaagaata catattcctt ttattttctaa ggaattaaac atagatgtag ctgatgtgga 120  
 gagcttgctg gtgcagtgca tattggataa cactattcat ggccgaattg atcaagtcac 180  
 ccaactcctt gaactggatc atcagaagaa ggttggtgca ccatatactg cactagataa 240  
 tggaccaacc aactaaattc tctcaccagg ctgtatcagt aaactggtt aacagaaaaac 300  
 a 301

<210> 271  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc feature  
 <222> {1}...{301}  
 <223> n = A,T,C or G

<400> 271  
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 tttatagctc atcttttaggg ttgatattca gtctatgctt ccttgctgtt tcttgatcca 120  
 gaattgcaat cacttcacca gctgttattc gctccaattc tclataaagt gggtcnaagg 180  
 tgaaccacag agccacagca cactcttttc ccttggtgac tgccttcacc ccatgnggt 240  
 tctctctctc agatganaac tgatcctgag cccacatttt gggttttata gaagcagtcac 300  
 c 301

<210> 272  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<400> 272  
 taatttgcta agccacagat aacaccaatc aantgganac aatcaactgtc ttcaaatgtc 60  
 ttctcagaaa acccaatgag cctggaatct tctataacc taacatgac gtatttagga 120  
 tccaataatt cctcatgat gagcaagaa aattctttgc gacccctcc tgcacccaca 180  
 gcatcttctc caacaaatat aaccttgag: ggttctctgt actctatgt ctttgttttc 240  
 ctaaggactt ccattgcac tctacacata ttttctctac gacccactag aattaagvag 300  
 g 301

<210> 273  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc feature  
 <222> {1}...{301}  
 <223> n = A,T,C or G

84

&lt;400&gt; 273

acatgtgtgt	atgtgtatct	ttgggaaan	aanagacat	cttgtttayt	atttttttgg	60
agagangctg	ggacatggat	aatcacwtaa	tttgcctayta	tyactttant	ctgactygaa	120
gaaccgtcta	aaaataaaat	ttaccatgtc	dtatatctct	tatagtatgc	ttatttcacc	180
ttytttctgt	ccagagagag	tatcagtgac	ananatttma	gggtgaamac	atgmattggt	240
gggacttnty	tttaengagm	accctgccc	sgcgccctcg	makcngantt	ccgcsananc	300
t						301

&lt;210&gt; 274

&lt;211&gt; 301

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(301)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 274

cttatataact	ctttctcaga	ggcaaaagag	gagatgggta	atgtagacaa	ttctttgagg	60
aacagtaaat	gattattaga	gagaangaat	ggaccaagga	gacagaaatt	aacttgtaaa	120
tgattctctt	tggaaatctga	atgagatcaa	gaggccagct	ttagcttggt	gaaaagtcca	180
tctaggtatg	gttgcaattct	cgtcttcttt	tctgcagtag	ataatgaggt	aaccgaaggc	240
aatttgtcct	cttttgataa	gaagctttct	tggtcataat	aggaaattcc	aganaaagtc	300
c						301

&lt;210&gt; 275

&lt;211&gt; 301

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(301)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 275

tgggtgtcag	cagcacgtgg	cattgaacat	tgcactgtgg	agcccaaacc	acagaaaatg	60
gggtgaaatt	ggccaaacttt	ctattaactt	atgttggcaa	ttttgccacc	aacagtaagc	120
tggcccttct	aataaaagaa	aattgaaagg	tttctcacta	aacgggaatta	agtagtggag	180
tcaagagact	cccaggcctc	agcgtacutg	ccggggcggc	cgctcgaagc	cgaattctgc	240
agatatccat	cacactggcg	gncgctcgan	catcatctct	gaaggnccaa	ttcgccctat	300
a						301

&lt;210&gt; 276

&lt;211&gt; 301

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 276

tgtacacata	ctcaataaat	aatgactgc	attgtggtat	tattactata	ctgattatat	60
ttatcatgtg	acttctaatt	agaaaatgta	tccaaaagca	aaacagcaga	tatacaaaat	120
taaagagaca	gaagatagac	attaacagat	aaggcaactt	atacattgag	aatccaaate	180
caatacatit	aaacatttgg	gaaatgaggg	ggacaaatgg	aagccagatc	aaattttgtt	240
aaaactattc	agtatgttcc	ccttgcttca	tgtctgagaa	ggctctcctt	caatggggat	300
g						301

&lt;210&gt; 277

&lt;211&gt; 301

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(301)  
 <223> n = A, T, C or G

<400> 277  
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 atacagaggga cttggaggaa gcagagcaac tgaatttaac ttaaaagaag gaaaacattg 120  
 gaatcatggc actcctgata ctttcccaaa tcaacactct caatgcccc cctcgtcct 180  
 caccatagtg gggagactaa agtggccaag gatttgcctt angtgtgcag tgcgttctga 240  
 gttcctgtgc gattacatct gaccagtctc ctttttccga agtccttcog ttcaatcttg 300  
 c 301

<210> 278  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(301)  
 <223> n = A, T, C or G

<400> 278  
 taccactaca ctccagcctg ggcaacagag caagacctgt ctcaaagcat aaaatggaat 60  
 aacelataca atgaaacagg gaaaatgaag ctgacaattt atggaagcca gggcttgcga 120  
 cagtctctac tggtattatg cattacctgg gaatttatat aagcccttaa taataatgcc 180  
 aatgaacatc tcatgtgtgc tcacaatgtt ctggcactat tataagtgtc tcacaggttt 240  
 tatgtgttct tcgtaacttt atggantagg tactcggcog cgaacacgct aagccgaatt 300  
 c 301

<210> 279  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(301)  
 <223> n = A, T, C or G

<400> 279  
 aaagcaggaa cgacaaagct tgctttctcg gtatgttcta ggtgtattgt gacttttact 60  
 gttatattaa ttgccaatat aagtaaatat agattatata tgtatagtgt ttcacaaagc 120  
 ttagaccttt accttccagc caccocacag tgcttgatat ttcagagtca gtcattgggt 180  
 atacatgtgt agttccaaag cacataagct agaanaanaa atattttctag ggagcactac 240  
 catctgtttt cacatgaat gccacacaca tagaactcaa acatcaattt cattgcacag 300  
 a 301

<210> 280  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<400> 280  
 ggtaclggag ltttctccc ctgtgaaaac gtaactactg ttgggagtga attgaggatg 60  
 tagaaagggt gtggaaccaa attgtggtca atggaaatag gagaatatgg ttctcactct 120  
 tgagaaaaaa acctaaagatt agccacagta gttgcctgta acttcagttt ttctgcctgg 180  
 gcttgatata gtttaggggt ggggttagat taagatctaa attacatcag gacaaagaga 240  
 cagactatta actccacagt taattaagga ggtatgttcc atgtttattt gttaaagcag 300  
 t 301

86

<210> 281  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<400> 281  
 aggtacaaga aggggaatgg gaaagagctg ctgctgtggc attgtccaac ttggatattc 60  
 gccgagcaat ccaaatcctg aatgaagggg catcttctga aaaaggagat ctgaatctca 120  
 atgtggtagc aatggcttta tcgggttata cggatgagaa gaactccctt tggagagaaa 180  
 tgtgtagcac actgcgatta cagctaaata acccgatttt gtgtgtcatg ttgcatcttc 240  
 tgacaagtga aacaggatct tacgatggag ttttgtatga aaacaaagtt gcagtaacct 300  
 g 301

<210> 282  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<400> 282  
 caggtactac agaatataaa tactgacaaq caagtatgtt cttaggctgc acgaattgca 60  
 tccagaaccc aaaaatttaag aaattcaaaa agactttttg tgggcacclg ctgacacaga 120  
 agcgcagaaq caaagcccaq gcagaaocat gctaaccttc cagctcaacc tgcacagaaq 180  
 cgcagaaagca aggcccaaggc agaacctatgc taaccttaca gctcagcctg cacagaaagc 240  
 caggaagcaaa gccnaggcag aacatgctaa ccttacagct cagcctgcac agsagcacag 300  
 a 301

<210> 283  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<400> 283  
 atctgtatac ggcagacaaa ctttatarag tgtagagagg tgagcgaag gatgcnaag 60  
 cactttgagg gutttataat aatatctctg ttgaaaaaa aaatgtgttg ttgclactca 120  
 gtgcatacct agacatagta aggggttgcct clgacccatc aggtgatcct tttttctatc 180  
 acttcccagg ttttctgcaa aaatttttgt aaattctata atgglgatat gcatctttta 240  
 ggaaacctat acatllttaa aaatctattt tatgtaagaa ctgacagacg aatttgcttt 300  
 g 301

<210> 284  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<400> 284  
 caggtacaaa accctattaa gtggcttaga atttgaacat ttgtggtctt tatttacttt 60  
 gcttcgtgtg tgggcacaaag aacatcttcc ctaaaatat attaccaaga aaagcaagaa 120  
 gcagattagg tttttgacaa aacaaacagg ccnaaagggy gctgacctgg agcagagcat 180  
 ggtgagaggc aagguatgag agggcaagtt tgttgtggac agatctgtgc ctactttatt 240  
 actggagtaa aaggaacaaag agttuattga tgcgaagga tatatacagt gttagaantt 300  
 a 301

<210> 285  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(301)  
 <223> n ~ A,T,C or G

87

&lt;400&gt; 285

acatcaccat gatcggtacc cccacccatt ataogttgta tgtttacata aatactcttc	60
aatgatcatt agtgttttaa aaaaaatact gaaaactcct tctgcacccc aatctctaac	120
caggaaagca aatgctatct acagacctgc aagccctccc tcaaacnaaa ctatttctgg	180
attaaatatg totgacttct tttgaggcca caccgactagg caaatgctat ttacgatctg	240
caaaagctgt ttgaagagtc aaagccccc tgtgaacacg atttctggac cctgtaacag	300
t	301

&lt;210&gt; 286

&lt;211&gt; 301

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 286

tacccactgc ttccagcctg gctgacagag tgagactccg tctccaaaa aactcttctg	60
tglatattct ttttgcctta cagtggaacc ttctagttag aagggaacgt agatttttll	120
atcaaaatgt gtcctgccag taagagatgt tatattcttt tctccttctc tccccaccca	180
aaaataagct acctatagc ttataagctc caaatllttg ccttttacta aaatgtgatt	240
gtttctgttc attgtgtatg cttcctcacc tatatttaggc aaatttcctt ttttcccttg	300
t	301

&lt;210&gt; 287

&lt;211&gt; 301

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 287

tacagatctg ggaactaaat attaaaaatg agtgtggctg gatatatgga gaatgtctgg	60
cccagaagga acgtagagat cagatattac aacagctttg ttttgagggt tagaatatg	120
aaatgatttg gttctgaacg cccagtttag gcagcagggc cagaatcctg acctctggcc	180
cagtggttat cttcttccca gcttggtcgc ctcatgttat cccagtattc ctttllggtt	240
gttgcatgtc ttgtgaagcc atcaagcttt tctcgtctgt tttctctctc ttggtaatgc	300
t	301

&lt;210&gt; 288

&lt;211&gt; 301

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 288

gtacacctaa ctgcaaggac agctgaggaa tghtaatggc agccgctttt aaagaagtag	60
agtcaatagg aagacaaatt ccagttccag ctcatgtctg gtatctgcaa agctgcacaa	120
gatcttttaa gcaatttcca agagaatatt tcoctaaagt tggcaatttg gagatcatc	180
aaaagcatct gcttttgtga ttttaatttag ctcatctggc cactggaaga atccaaacag	240
tctgccttaa ttttggatga atgcattgtg gaaattcaat aatttagaaa gttcaaaaaa	300
a	301

&lt;210&gt; 289

&lt;211&gt; 301

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(301)

&lt;223&gt; n = A,T,C x G

&lt;400&gt; 289

ggtacactgt ttccatgtta tgtttctaca cattgctacc tcagtgtctc tggaaactta	60
gcttttgatg tctccagta gtccaccttc atttaactct ttgaaactgt atcatctttg	120
ccaagtaaga gtggtggcct tttcagctg ctttgacaaa atgactggct cctgacttaa	180

cgttctataa atgaatgtgc tgaagcaaag tgcccatggc ggcgggcgaan aagaqaaaga 240  
 tgtgttttgt tttggactct ctgtggtccc ttccaatget gtgggtttcc aaccagngga 300  
 a 301

<210> 290  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(301)  
 <223> n = A,T,C or G

<400> 290  
 acactgaget cttcttgata aatatacaga atgcttggca tatacaagat tctatactac 60  
 tgactgatct gttcatttct ctcacagctc ttaccccca aagcttttcc accctaagtg 120  
 ttctgacctc cttttctaata cacagtaggg atagaggcag anccacctac aatgaacatg 180  
 gagttctatc aagaggcaga aacagcacag aatcccagtt ttaccattcg ctacgagtgc 240  
 tgccttgaac aaaaacattt ctccatgtct cttttcttc atgctcaag taacagtga 300  
 a 301

<210> 291  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<400> 291  
 caggtaacaa tttctttctat cctagaaccc tttcatttba tgttgttgaa acataaacaac 60  
 tatatcagct agatlltlll tctatgcttl aculgcclatg gaaaalllga cacattctgc 120  
 tttactcttt tgtttatagg tgaatcacia aatgtatttt tatgtattct gtagttcaat 180  
 agccatggct gtttacttca tttaatitit ttagcataaa gacattatga aaaggcctaa 240  
 acatgagctt cacttcccca ctaactaatt agcatctgtt atttcttaac cgtaatgcct 300  
 a 301

<210> 292  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(301)  
 <223> n = A,T,C or G

<400> 292  
 accttttagt agtaatgtct aataataaat aagaaatcaa ttttataagg tccatatagc 60  
 tgtattaaat aatttttaag tttaaaagat aaaataccat cattttaaat gttggtattc 120  
 aaaaocaaaag natataaccg aaaggaaaaa cagatgagac ataaaatgat ttgcnagatg 180  
 ggaatatatg taatttatga atgttnatta aattccagtt ataatagttg ctacacactc 240  
 tcactacaca cacagacccc acagtcctat atgccacaaa cacatttcca taacttgaaa 300  
 a 301

<210> 293  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<400> 293  
 ggtaccagt gclqqlqcca gctgttacc tgttctcact gaaaagtctg gcta tgcctc 60  
 tlqlqbaglc acttctgatt ctgacantua atcaatcaat ggccatagag acitgaactgtt 120  
 aavacaaacg tcaclagcaa agtagcaaca gctttaagtc tcaatacaaa gctgttctgt 180

89

gtgagaattt tttaaaaggc tacttgata ataacccttg tcatttttaa tgtacctggg 240  
 ccgcgaccac gctaagccga attctgcaga tatccatcac actggcggcc gctcgagcat 300  
 g 301

<210> 294  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(301)  
 <223> n = A,T,C or G

<400> 294  
 tgaccataa caatatacac tagctatott tttaatgtc catcattagc accaatguag 60  
 attcaataaa attacottta ttccacacac tcaaaaacaa tctgcgaatt cttagtgaag 120  
 tttacotata gtcacaganc ttcaatatcc acattgtttt ctatgtctac tgaagaataag 180  
 ttcaactact ttctgggata ttctttacaa aatcttatta aaattcctgg tattalcaac 240  
 cccaattata cagtagcaca accacottat gtagltttta catgalagcl ctgtagagggt 300  
 t 301

<210> 295  
 <211> 305  
 <212> DNA  
 <213> Homo sapien

<400> 295  
 gtacttttcc tctccctccc tctgaattta attctttcaa cttgcaattt gcaaggatta 60  
 cacatttcac tgtgatgtat attgtgttgc aaaaaaaa gtgtcttctg ttaaaattac 120  
 ttggtttgtg aatccatctt gctttttccc cattgggaact agtcattaac ccctctctga 180  
 actggtagaa aaactctgaa agagctagtc tatcagcacc tgcaggtga attggatggt 240  
 tctcagaacc atttcaccca gacagcctgt ttctatcctg ttttaataaat taqtttgggt 300  
 tctct 305

<210> 296  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<400> 296  
 aggtactatg ggaagctgct aaaataatat ttgatagtaa aagtatgtaa tgtgctatct 60  
 carctagtag taacttaaaa ataaactgaa actttatgga atctgaagtt atttctctg 120  
 attaaataga attaataaac caatatgagg aaacatgaaa ccatgcaatc tactatcaac 180  
 ttgaaaaaag tgattgaacg aaccacttag ctttcagatg atgaacactg ataagtcatt 240  
 tgtcattact ataaatttta aaatctgtta ataagatggc ctatagggag gaaaaagggg 300  
 c 301

<210> 297  
 <211> 300  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(300)  
 <223> n = A,T,C or G

<400> 297  
 actgaatttt aactggacgc caagcaggca aggetggaag gttttgctct ctttgtgcta 60  
 aaggttttga aaacttgaa ggagaatcat ttgacaaga agtaactaag agtctagaga 120  
 acaagangt gaaccagctg aaagctctcg ggggaanctt acatgtgttg ttaggcctgt 180

90

tccatcattg	ggagtgcact	ggccatccct	caaaatttgt	ctgggctggc	ctgagtggtc	240
accgcacctc	ggccgcgacc	acgctaagcc	gaattctgca	gatatccatc	acactggcgg	300

<210> 298  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc feature  
 <222> {1}...{301}  
 <223> n = A,T,C or G

<400> 298						
tatggggttt	gtaccccaaa	agctgatgct	gagaaaggcc	tccctggggc	ccctcccgog	60
ggcatctgag	agacctgggt	ttccagtgtt	tctggaaatg	ggccccagt	ccgcgggctg	120
tgaagctctc	agatcaatca	cgggaagggc	ctggcggtgg	tggccacctg	gaaccacct	180
gtctgtctg	ttacatttc	actaycaagt	ttctctggg	cattacnatt	tgttcccta	240
caacagtgc	ctgtgcattc	tgtgtggcc	tgtgtgtct	gcaggtggt	ctcagcgagg	300
t						301

<210> 299  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<400> 299						
gttttgagac	ggagtttcac	tcttgttgcc	cagactggac	tgcaatggca	gggtctctgc	60
tcactgcacc	ctctgcctcc	caggttcgag	caattctcct	gcctcagcct	cccaggttagc	120
tgggattgca	ggctcactgc	accataccca	gctaattttt	ttgtattttt	agtagagacg	180
gagtttcgcc	atgttggcca	gctggtctca	aactcctgac	ctcaagcgac	ctgcctgcct	240
cgccctccca	aagtgtctga	attataggca	tgagtcaaca	cgcccgagct	aaagatattt	300
t						301

<210> 300  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<400> 300						
attcagtttt	atttgcctgc	ccagtatctg	taaccaggag	tgccacaaaa	tcttgccaga	60
tatgtccac	accactggg	aaaggctccc	acctggctac	ttcctctatc	agctgggtca	120
gctgcattcc	acaaggctct	cagcctaatt	agtttcaact	cctgccagtc	tcaaaactta	180
gtaaagcaag	accatgacat	tccccacgg	aaatcagagt	ttgcccaccc	gtcttgttac	240
tataaagcct	gcctctaaca	gtccttgctt	ottcacacca	atcccagagc	catcccccat	300
g						301

<210> 301  
 <211> 301  
 <212> DNA  
 <213> Homo sapien

<400> 301						
ttaaattttt	gagaggataa	aaaggacaaa	taatctagaa	atqlqhtcttc	tlcagctctgc	60
agaggacccc	aggtctccaa	gcaaccacat	ggtcaggggc	atgaatcatt	aaaagttagt	120
gggaactcac	aaagaccctc	agagctgaga	caccacaac	agtgggagcl	cacaaagacc	180
ctcagagctg	agacacccac	aacagtggga	gctcacaag	acccctcagag	ctggagaccc	240
cccacagca	cctcgttcag	ctgccacatg	tgtgaataag	gatgcacatgt	ccagaagtgt	300
t						301

<210> 302  
 <211> 301



<212> DNA  
<213> Homo sapien

<400> 302  
aggtacacat ttagcttgtg gtaaatgact cacaaaactg attttaaaat caagttaatg 60  
tgaattttga aaattactac ttaatcctaa ttcacaataa caatggcatt aaggtttgac 120  
ttgagttggt tcttagtatt atttatggta aataggctct taccacttgc aaataactgg 180  
ccacatcatt aatgactgac ttcccagtaa ggctctctaa ggggtaagta ggaggatcca 240  
caggatttga gatgctaagg ccccagagat cgtttgatcc aacctctta ttttcagagg 300  
g 301

<210> 303  
<211> 301  
<212> DNA  
<213> Homo sapien

<400> 303  
aggtaccaac tgtggaaata ggtagaggat catftttttct tcccatatca actaagttgt 60  
atattgtttt ttgacagttt aacacatctt cttctgtcag agattctttc acaatagcac 120  
tggctaattg aactaccgct tgcattgtta aaatgggtgt ttgtgaattg atcataggcc 180  
agtaacgggt atgtttttct aactgatctt ttgtctcttc caaagggaac taaagcttc 240  
catgatttt atatctgggg tctagaaaaa gagtcaatct gttttccctc ataaattcac 300  
c 301

<210> 304  
<211> 301  
<212> DNA  
<213> Homo sapien

<400> 304  
acatggatgt tattttgcag actgtcaacc tgaatttcta tttgcttgac attgcctaatt 60  
tattagtttc agtttcagct taccacattt ttgtctgcaa catgcaraas agacagtgcc 120  
cttttttagtg tatcatatca ggaatcatct cacattgggt ttgtccatta ctggtgcagt 180  
gactttcagc cacttgggta aggtggagtt ggccatctgt ctccactgca aaattactga 240  
ttttcccttt gtaattaata agtgtgtgtg tgaagattct ctgaagtga gtatatact 300  
c 301

<210> 305  
<211> 301  
<212> DNA  
<213> Homo sapien

<220>  
<221> misc feature  
<222> (1)...(301)  
<223> n = A,T,C or G

<400> 305  
gangtacagc gtggtcaagg taacaaqaag aaaaaaatgt gagtggcctc ctgggatgag 60  
cagggggaca gacctggaca yacacgttgt calttctctc tgtgggtagg aacatgggcy 120  
taaaggagga gaaacagata ccaaaletcc aactcaglat taaggtattc tcatgcctag 180  
aatatttgta qaaacaagaa tacattcata tggcaaatca claaaccatg tggaaacaaa 240  
ttctgggatt taagliggat accaangaaa ttgtattaaa agagctcttc atygaataag 300  
a 301

<210> 306  
<211> 8  
<212> PRT  
<213> Homo sapien

<400> 306  
Val Leu Gly Trp Val Ala Glu Leu

1

5

<210> 307  
 <211> 637  
 <212> DNA  
 <213> Homo sapien

<400> 307

acagggratg	aagggaag	gagaggatga	ggaagcccc	ctggggattt	ggtttggtcc	60
ttgtgatcag	gtggtctatg	gggtttatcc	ctacaaagaa	gaatccagaa	ataggggcac	120
attgaggaat	gatacttgag	cccaaagagc	attcaatcat	tgttttattt	gccttmtttt	180
cacaccattg	gtgaggagag	gattaccacc	ctggggttat	gaagatgggt	gaacacccca	240
cacatagcac	cggagatag	agatcaacag	tttcttagcc	atagagattc	acagccuaga	300
gcaggaggac	gcttgccacac	catgcaggat	gacatggggg	atgcgcctcg	gattgggtgtg	360
aagaagcaag	gactgttaga	ggcaggcttt	ataqtaacaa	gacgggtggg	caaacctctga	420
tttccgtggg	ggaatgtcat	ggtcttgctt	tactaagttt	tgagactggc	aggtagtgaa	480
actcattag	ctgagaaact	tgtggaalgc	acttgaccca	actgatagag	gaagtggcca	540
gggtggggcc	tttcccagtg	ggtgtgggac	atatctggcc	agatlltgkg	gcactcctgg	600
ttacagatag	tggggcagca	aalaaaaactg	aactcttg			637

<210> 308  
 <211> 647  
 <212> DNA  
 <213> Homo sapien

<220>

<221> misc\_feature

<222> (1)...[647]

<223> n = A,T,C or G

<400> 308

acgattttaa	ctctcatgta	actcgggtca	ctcaaggggc	caacacacagc	tgggagccac	60
tgtcagggg	aagggtccta	tgggactllc	tactgcccaa	ggttctatag	aggatataaa	120
ggngcctcac	agtalagatc	tggtagcaaa	gaagaagaaa	caaacactga	tctctttctg	180
caacccctct	gaccttttg	aactcctctg	accttttaga	acaagcctac	ctaatatctg	240
ctagagaaaa	gaccaacaac	ggcctcaaa	gatctcttac	catgaaggtc	tcagctaatt	300
cttggctaag	atgtgggttc	cacattaggt	tctgaatatg	gggggaagg	tcaatttgc	360
catttttgt	gtggataaag	tcaggatgcc	caggggccag	agcagggggc	tgcttgcttt	420
gggaacaatg	gctgagcata	taaccatagg	ttatggggaa	caaaaacaaca	tcaaaagtcac	480
tgtatcaatt	gocatgaaga	cttgagggac	ctgaatctac	cgattcatct	taaggcagca	540
ggaccagttt	gagtggcaac	aatgcagcag	cagaatcaat	ggaaacaaca	gaatgattgc	600
aatgtccttt	ttttctctct	gctcttgact	tgataaaagg	ggaccgt		647

<210> 309  
 <211> 460  
 <212> DNA  
 <213> Homo sapien

<400> 309

acttttatagt	ttaggcttga	cattggaaa	aaaaaaaagc	cagaaccaaca	tgtgatagat	60
aattctgattg	gctgcacact	tccagactga	tgaatgatga	acgtgatgga	ctattgtatg	120
gaacacatct	tcagcaagag	ggggaataac	tcactatttt	tggccagcag	ttgtttgatc	180
acccaaacatc	atgccagaat	actcagcaaa	ccttcttagc	tcttgagaag	tcaaaagtcg	240
ggggaaattta	ttcctggcaa	ttttaatttg	actccttatg	tgagagcagc	ggctaccacg	300
ctggggttgg	ggagcgaaac	cgtcactagt	ggacatgcag	tggcagagct	cctggtaacc	360
acctagggga	atcacacaggc	acatgtgtga	tgccaagcgt	gacaactgta	gcactcaaat	420
ttgtcttgtt	tttgtctttc	ggtgtgtaag	attcttaagt			460

<210> 310  
 <211> 539  
 <212> DNA  
 <213> Homo sapien

&lt;400&gt; 310

acggggactta	tcaaatataag	atagggeaaag	aagaaa ctc	aaatakkata	ggcagaaactg	60
ctaaaggttt	taaaatatgt	caggatttgg	agaaggcatg	gataaaggaac	aaagttcagt	120
taggaaagag	aaacacagaa	ggaaagagaca	caataaaggt	cattatgtat	tctgtgagaa	180
gtcagacagt	aagattttgtg	ggaaatgggt	tggtttgttg	tatggatagt	attttagcaa	240
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ttcttcaagg	taggcattgat	gaaggagggt	ttagaggaga	cacagacaca	atgaactgac	360
ctagatagaa	agccttagta	tactcagcta	ggaatagtga	ttctgagggc	acactgtgac	420
atgattatgt	cattacatgt	atggtagtga	tggggatgat	aggaaggaag	aacttatggc	480
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&lt;210&gt; 311

&lt;211&gt; 526

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(526)

&lt;223&gt; n = A, T, C or G

&lt;400&gt; 311

caaatattgag	ccaattgacat	agaatatttac	aaatcagaa	gattattctg	gggccatttc	60
ttttgacgtt	ttctctaaac	tactaaagag	gcctlaatga	tcclaaattt	atattatcta	120
catttaacgc	atttaaaatg	tgttcagcat	gaatatattg	ctacagggga	agclaaataa	180
atleaacatg	gaataaagat	ttgtccttaa	atataatcta	caagaagact	ttgatatttg	240
tttttcacaa	gtgaagcatt	cttataaagt	gtcataacct	ttttggggaa	actatgggaa	300
aaaatgggga	aactctgaag	ggtttttaagt	atcttacctg	aagctacaga	ctccataacc	360
tctctttaca	gggagctcct	gcagccccta	cagaaatgag	tggctgagat	tcttgattgc	420
acagcaagag	cttctcatct	aaaccccttc	cctttttagt	atctgtgtat	caagtataaa	480
agttotataa	actgtagtnt	acttatttta	atccccaaag	cacagt		526

&lt;210&gt; 312

&lt;211&gt; 500

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(500)

&lt;223&gt; n = A, T, C or G

&lt;400&gt; 312

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tcattttctga	aagcagttga	gccactttat	tcbaaagtac	actgcagatg	ttcaaactct	120
ccattttctct	ttcccttcca	cctgccagtt	ttgctgactc	tcaacttgto	atgagtgtaa	180
gcatttaagga	cattatgott	cttcgattct	gaagacaggo	cctgctcatg	gatgactctg	240
gottcttagg	aaaatatttt	tcttccaaaa	tcagtaggaa	atctaaaact	atccccctct	300
tgcagatgtc	tageagcttc	agacatttgg	ttagaacccc	atgggaaaaa	aaaaaatccf	360
tgotaatgtg	gtttcctttg	taaaccaaga	ttcttatttg	netggatatg	aatatcagct	420
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tagttottaat	taictatttg					500

&lt;210&gt; 313

&lt;211&gt; 718

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(718)

&lt;223&gt; n - A, T, C or G

&lt;400&gt; 313

ggagatttgc	gtgggtttgca	gocgagggag	accaggaaga	tctgcatggt	gggaaggacc	60
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ctgctgaaat	ggagataatt	aacatcacta	gaaacagcaa	gatgacaata	taatgtctaa	180
gtagtacat	gtttttgcac	atttccagcc	cttttaata	ccacacaca	caggagcac	240
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gcctcgccct	gtgcctgntc	ccgcttgtga	gggaaggaca	ttagaaaatg	aattgatgtg	360
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aactggggag	gagataccac	ggggcagagg	tcaggattct	ggccctgctg	cctaactgtg	600
cgttatacca	atcatttcta	ttctaccct	caaaacagct	gtngaatatc	tgacttaagg	660
ttcttntggc	ccacattttc	atnatecacc	ccntcntttt	aantttantc	caaaantgt	718

&lt;210&gt; 314

&lt;211&gt; 358

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 314

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caacatgtgt	agatctcttg	tcttattctt	ttgtctataa	tactgtattg	tgtagtccaa	180
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&lt;210&gt; 315

&lt;211&gt; 341

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 315

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agtcacacgc	tcccccagca	gcgggatata	gtccttaggg	gtcatgtagg	cttccctgaag	240
tagcttctgc	tgttaagagg	tgttgcctcg	ggggctcgtg	cggttattgg	tcctgggctt	300
gagggggcgg	tagatgcagc	acatggtgaa	gcagatgatg	t		341

&lt;210&gt; 316

&lt;211&gt; 151

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 316

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tgtggggcct	tcctggatct	ctgatttata	accccaactg	agcgatgtgt	tgaclygact	120
catttcaggga	gctctgggtg	caatcttagt	t			151

&lt;210&gt; 317

&lt;211&gt; 151

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 317

agaactagtg	gatcctaatt	aaatacctga	aacatatatt	ggcattttatc	aatggctcaa	60
atcttcattt	atctctggcc	ttaacctgg	ctcctgaggc	tgccggccagc	agatcccagg	120
ccagggetct	gttcttgcca	caactgcttg	a			151

95

<210> 318  
 <211> 151  
 <212> DNA  
 <213> Homo sapien

<400> 318  
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 tggggcggt ttatcaggca gtgataaaca t 151

<210> 319  
 <211> 151  
 <212> DNA  
 <213> Homo sapien

<400> 319  
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 catagatagt actaggtatt aatagatatg taaagaaaga aatcacacca ttaataatgg 120  
 taagattggg tttatgtgat tttagtgggt a 151

<210> 320  
 <211> 150  
 <212> DNA  
 <213> Homo sapien

<400> 320  
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 gaggcgctgc cctttttttt tttttttttg ggggggaatt tttttttttt aatagttatt 120  
 gagtgttcta cagcttcag taaataccat 150

<210> 321  
 <211> 151  
 <212> DNA  
 <213> Homo sapien

<400> 321  
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 tgctctgag aatcaaagt ctccatacac t 151

<210> 322  
 <211> 151  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature  
 <222> (1)...(151)  
 <223> n = A, T, C or G

<400> 322  
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 tttgggcttg gtcagtttgc cacagggtt ggagatgggt acagtcttct ggcattcggc 120  
 attgtgcagg gctcgttcca nacttccagt t 151

<210> 323  
 <211> 151  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc\_feature

&lt;222&gt; (1)...(151)

&lt;223&gt; n = A, T, C or G

&lt;400&gt; 323

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nagactcant	tactaccag	tctgtggtt	twtgggagaa	atgtaactgg	acagttagct	120
gttcaatyaa	aaagacactt	ancccatgkq	g			151

&lt;210&gt; 324

&lt;211&gt; 461

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(461)

&lt;223&gt; n = A, T, C or G

&lt;400&gt; 324

acctgtgttg	aatttcagct	ttcctcatgc	aaaaggattt	tgtatccccg	gcctacttga	60
agaagtgttc	agctaaagga	atccaggttg	ttgggttggac	tgtaataacc	tttgatgaaa	120
agagttacta	cgaateccat	cttgggttcca	gctatatcac	tgacagcatg	gtagaagact	180
gcgaacctca	cttctagact	ttcaoggttg	gacgaacagg	gttcagaaac	tgcuaggggc	240
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cacacaastg	caatagtttg	tcaatgcatt	tttacctgaa	ccaaagctaa	accgggtgtt	360
gccaccatgc	accatggcat	gccagagttc	aaactgtgtg	ctcttqaaaa	ttgggtctlga	420
aaaaacgcac	aagagccctc	gccctgccct	agclgagaca	c		461

&lt;210&gt; 325

&lt;211&gt; 400

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 325

acactgtttc	catgtttatgt	ttctacacat	tgtacacctca	gtgctccttg	aaacttagct	60
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&lt;210&gt; 326

&lt;211&gt; 1215

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 326

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97

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agacccccca gccctcctc cctcagaccc aggagtccag cccctcctcc ctcaaaccca 900
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<210> 327  
 <211> 220  
 <212> PRT  
 <213> Homo sapien

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<400> 327
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1 5 10 15
Glu Asn Glu Leu Phe Cys Ser Gly Val Leu Val His Pro Gln Trp Val
20 25 30
Leu Ser Ala Ala His Cys Phe Gln Asn Ser Tyr Thr Ile Gly Leu Gly
35 40 45
Leu His Ser Leu Glu Ala Asp Gln Glu Pro Gly Ser Gln Met Val Glu
50 55 60
Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Pro Leu Leu Ala
65 70 75 80
Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser Glu Ser Asp
85 90 95
Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr Ala Gly Asn
100 105 110
Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Gly Arg Met Pro
115 120 125
Thr Val Leu Gln Cys Val Asn Val Ser Val Val Ser Glu Glu Val Cys
130 135 140
Ser Lys Leu Tyr Asp Pro Leu Tyr His Pro Ser Met Phe Cys Ala Gly
145 150 155 160
Gly Gly Gln Asp Gln Lys Asp Ser Cys Asn Gly Asp Ser Gly Gly Pro
165 170 175
Leu Ile Cys Asn Gly Tyr Leu Gln Gly Leu Val Ser Phe Gly Lys Ala
180 185 190
Pro Cys Gly Gln Val Gly Val Pro Gly Val Tyr Thr Asn Leu Cys Lys
195 200 205
Phe Thr Glu Trp Ile Glu Lys Thr Val Gln Ala Ser
210 215 220

```

<210> 328  
 <211> 234  
 <212> DNA  
 <213> Homo sapien

```

<400> 328
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atccgcagtg ggtgctgtca gccacacact gttccagaa ctctacacc atcgggctgg 180
gcctgcacag tcttgaggcc gaccaagagc caggagagca gatggtggag gcca 234

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<210> 329  
 <211> 77  
 <212> PRT  
 <213> Homo sapien

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<400> 329
Leu Val Ser Gly Ser Cys Ser Gln Ile Ile Asn Gly Glu Asp Cys Ser
1 5 10 15

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98

Pro His Ser Gln Pro Trp Gln Ala Ala Leu Val M t Glu Asn Glu Leu  
 20 25 30  
 Phe Cys Ser Gly Val Leu Val His Pro Gln Trp Val Leu Ser Ala Thr  
 35 40 45  
 His Cys Phe Gln Asn Ser Tyr Thr Ile Gly Leu Gly Leu His Ser Leu  
 50 55 60  
 Glu Ala Asp Gln Glu Pro Gly Ser Gln Met Val Glu Ala  
 65 70 75

<210> 330  
 <211> 70  
 <212> DNA  
 <213> Homo sapien

<400> 330  
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 gctgcagcca 70

<210> 331  
 <211> 22  
 <212> PRT  
 <213> Homo sapien

<400> 331  
 Gln His Asn Gly Pro Ile Pro Ser Leu Thr Pro Pro Ser Gly Ser Leu  
 1 5 10 15  
 Val Ser Gly Ser Cys Ser  
 20

<210> 332  
 <211> 2507  
 <212> DNA  
 <213> Homo sapien

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 <211> 3030  
 <212> DNA  
 <213> Homo sapien

<400> 333						
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101

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 335

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&lt;210&gt; 336

&lt;211&gt; 147

&lt;212&gt; PRT

&lt;213&gt; Homo sapien

&lt;400&gt; 336

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102

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Pro Lys Gln Pro Gln Lys Arg Ser Arg Ala Ala Phe Ser His Thr Gln
35           40           45
Val Ile Glu Leu Glu Arg Lys Phe Ser His Gln Lys Tyr Leu Ser Ala
50           55           60
Pro Glu Arg Ala His Leu Ala Lys Asn Leu Lys Leu Thr Glu Thr Gln
65           70           75           80
Val Lys Ile Trp Phe Gln Asn Arg Arg Tyr Lys Thr Lys Arg Lys Gln
85           90           95
Leu Ser Ser Glu Leu Gly Asp Leu Glu Lys His Ser Ser Leu Pro Ala
100          105          110
Leu Lys Glu Glu Ala Phe Ser Arg Ala Ser Leu Val Ser Val Tyr Asn
115          120          125
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<210> 337
<211> 9
<212> PRT
<213> Homo sapien

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<210> 338
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<210> 339
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<212> PRT
<213> Homo sapien

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Cys Thr Ser Thr Val Gln Leu Pro Gly Lys Val Val Val Val Thr Gly
35           40           45
Ala Asn Thr Gly Ile Gly Lys Glu Thr Ala Lys Glu Leu Ala Gln Arg
50           55           60
Gly Ala Arg Val Tyr Leu Ala Cys Arg Asp Val Glu Lys Gly Glu Leu
65           70           75           80
Val Ala Lys Glu Ile Gln Thr Thr Thr Gly Asn Gln Gln Val Leu Val
85           90           95
Arg Lys Leu Asp Leu Ser Asp Thr Lys Ser Ile Arg Ala Phe Ala Lys
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Gly Phe Leu Ala Glu Glu Lys His Leu His Val Leu Ile Asn Asn Ala
115          120          125
Gly Val Met Met Cys Pro Tyr Ser Lys Thr Ala Asp Gly Phe Glu Met

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	165	170
Ser Leu Ala His His Leu Gly Arg Ile His Phe His Asn Leu Gln Gly		175
	180	185
Glu Lys Phe Tyr Asn Ala Gly Leu Ala Tyr Cys His Ser Lys Leu Ala		190
	195	200
Asn Ile Leu Phe Thr Gln Glu Leu Ala Arg Arg Leu Lys Gly Ser Gly		205
	210	215
Val Thr Thr Tyr Ser Val His Pro Gly Thr Val Gln Ser Glu Leu Val		220
	225	230
Arg His Ser Ser Phe Met Arg Trp Met Trp Trp Leu Phe Ser Phe Phe		235
	245	250
Ile Lys Thr Pro Gln Gln Gly Ala Gln Thr Ser Leu His Cys Ala Leu		255
	260	265
Thr Glu Gly Leu Glu Ile Leu Ser Gly Asn His Phe Ser Asp Cys His		270
	275	280
Val Ala Trp Val Ser Ala Gln Ala Arg Asn Glu Thr Ile Ala Arg Arg		285
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Leu Trp Asp Val Ser Cys Asp Leu Leu Gly Leu Pro Ile Asp		300
305	310	315

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 <211> 483  
 <212> DNA  
 <213> Homo sapien

<400> 340

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 <211> 344  
 <212> DNA  
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<400> 341

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 <212> DNA  
 <213> Homo sapien

<400> 342

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&lt;210&gt; 343

&lt;211&gt; 382

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 343

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&lt;210&gt; 344

&lt;211&gt; 536

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 344

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caactaaact	gccactaata	gttatgtcat	ccctcttatt	aatcatcatc	ctagccctaa	480
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&lt;210&gt; 345

&lt;211&gt; 251

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 345

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gtgcacattc	c					251

&lt;210&gt; 346

&lt;211&gt; 282

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(282)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 346

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agaaaggctt	tctatttcac	tgccccaggt	agggggaagg	agagtaactt	tgagtcgtg	240
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&lt;210&gt; 347

&lt;211&gt; 201

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; misc feature

&lt;222&gt; (1) ... (201)

&lt;223&gt; n = A, T, C or G

&lt;400&gt; 347

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tataaagaat	ttttttttgt	c				201

&lt;210&gt; 348

&lt;211&gt; 251

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 348

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ggggaagggt	ttattataga	actcccaaca	gcccacactca	ctcctgccac	cccccagatg	240
gccctgcctc	c					251

&lt;210&gt; 349

&lt;211&gt; 251

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 349

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cagaagggtc	tgaactctac	gtgttaccag	agaacataat	gcaattcatg	cattccactt	180
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&lt;210&gt; 350

&lt;211&gt; 908

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 350

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106

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<210> 351  
 <211> 472  
 <212> DNA  
 <213> Homo sapien

<400> 351						
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gatctgtcca	caacaaactt	gcoctctcat	gccttgccctc	tcaccatgct	ctgctccagg	360
tcagccccc	tttgccctgt	ttgttttgtc	aaaaacctaa	tctgcttctt	gcttttcttg	420
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 <212> DNA  
 <213> Homo sapien

<400> 352						
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<210> 353  
 <211> 436  
 <212> DNA  
 <213> Homo sapien

<400> 353						
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gataaggcaa	cttatacatt	gacaaacca	atccaataca	tttaaacctt	tgggaalga	240
gggggacaaa	tgggaagca	atcaaatctg	tgtanaacta	ttcaglatgt	ttccttctgt	300
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tlaaacagaa	actagattca	cactgggaac	ggggtaaaag	agaaattatt	ttctataaaa	420
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<210> 354  
 <211> 854  
 <212> DNA  
 <213> Homo sapien

<400> 354						
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gtgagtgaag	gatccccatt	ataggagcac	ttgggagaga	tcataataaa	cctgactctt	420
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caatatggaa	ggctctaaat	tgccatatt	tgaataata	actcagcttt	ttgtatataa	660
aaataacaaa	ggattgagaa	tcattggtgc	taattgtata	aagaccagag	aaacataaat	720
atatcaactg	cataaatgta	aaatgcatgt	gaccaagaa	ggcccaaaag	tggcagacaa	780
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acacgggatg	tcag					854

<210> 355  
 <211> 676  
 <212> DNA  
 <213> Homo sapien

<400> 355						
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ggtgtctcat	ttgagtgctg	tccagtgaac	tgatcaagtc	aalyaqttaa	attttaaggg	600
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gcttaaaagaa	aaccag					676

<210> 356  
 <211> 574  
 <212> DNA  
 <213> Homo sapien

<400> 356						
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catgtggcac	ctgactggca	tcaaaacaaa	gttcgttagc	caacaaagat	gggocactca	120
caagcttccc	atttgtagat	ctcagtgcc	ctgagttctc	gacacctgtt	cctctcttca	180
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gatagacggc	acaggagct	cttaggtcag	cgtgctggt	tggaggacac	tectgagtc	540
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<210> 357  
 <211> 393  
 <212> DNA  
 <213> Homo sapien

<400> 357						
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taatatggkg	ktttgttcac	tatacttaaa	aatgcaccaa	tataaatat	ttaattcagc	120
aaagccacaac	caaracttga	ttttatcaac	aaauacccct	aatatataac	ggsaaaaaag	180
atagatataa	ttactccagt	tttttcaaaa	cttaaaarat	attccattgc	ogaattaara	240
eraarataag	tgttatatgg	aaagaagggc	allcaagcac	actaaaraaa	cctgaggkaa	300
gcataaatctg	tacaaaatta	aactgtcctt	tttggcatlt	taacaaattt	gcaacgktct	360
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<210> 358  
 <211> 630  
 <212> DNA  
 <213> Homo sapien

&lt;400&gt; 358

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gagtttaaac	tgaagagagc	aagtgtctaa	actgaaggat	gtgttgaaag	agaagggaag	240
gtagaaacat	ttgggcagag	ggaaaccttat	agaccttaag	gtgggaagggt	tcaaaagaact	300
gaaagagagc	tageaacagct	ggagccgttc	tccggtgtaa	agaggagatca	aagagataag	360
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gaaagacaaa	aataagtggg	gaaattcagg	ggatagtga	aatcagtagg	acttaatgag	600
caagccagag	gttcctccac	aacaaccagt				630

&lt;210&gt; 359

&lt;211&gt; 620

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 359

acagcattcc	aaaatataca	tctagaguct	aarrgtaaat	gctctatagt	gaagaagtaa	60
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ctcaccagaa	gaataaagtg	ctctgccagt	tattaaaggga	ttactgctgg	tgaatttaaat	180
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tgcacacatta	tgcttctctg	ataalctgtg	gaaagaaagg	ctgatgaaa	tgacatcctt	420
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ctgtaaagat	gtgacagtgt					620

&lt;210&gt; 360

&lt;211&gt; 431

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 360

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lgatgaatga	tgaacgtgat	ggactattgt	atggagacaa	tcttcagcaa	gagggggaaa	120
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agattcttag	t					431

&lt;210&gt; 361

&lt;211&gt; 351

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 361

acactgattt	ccgatcaaaa	gaatcatcat	ctttacattg	acttttcagg	gaattactga	60
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ctgcacactt	gtcctccagc	lctgaacagct	cctcatclgt	ggctcctgtg	t	351

&lt;210&gt; 362

&lt;211&gt; 463

<212> DNA  
<213> Homo sapien

<400> 362  
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agttccattt ctcaatttgg ttgatctggg tgccttccat gtgttggtc tgggcatagc 360  
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<210> 363  
<211> 653  
<212> DNA  
<213> Homo sapien

<220>  
<221> misc feature  
<222> (1)...[653]  
<223> n = A,T,C or G

<400> 363  
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<212> DNA  
<213> Homo sapien

<400> 364  
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acgtgcatag taaatcttta tatttgctat ggcgttgcac tagaggactt ggaactgcac 360  
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<210> 365  
<211> 356  
<212> DNA  
<213> Homo sapien

<400> 365  
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110

<210> 366  
 <211> 1851  
 <212> DNA  
 <213> Homo sapien

&lt;400&gt; 366

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cctttgtcag	agctgtcttc	tttttgttgt	caaggacatt	aagttgacat	cgtctgtcca	720
gcacgagttt	tactacttct	gaattcccat	tggcagagge	cagatgtaga	gcagtcctct	780
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gctcctgaga	aacaccccag	ctcttcgggt	ctaacacagg	caagtcaata	aatgtgataa	1620
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tttgacaaaa	tccagcatcc	llqatlttat	tgttgcaqtt	ctcagaggaa	atgctttctaa	1740
cttttcccca	tttqglatta	tgttggtctc	gggcttctca	taggttggtt	ttattacctt	1800
aaggtctgtc	ccttctatgc	ctgttttgc	gagggtttta	atctcgtgc	c	1851

<210> 367  
 <211> 668  
 <212> DNA  
 <213> Homo sapien

&lt;400&gt; 367

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acortataag	agcagtgttt	tggccattaa	tttatcttct	atttgtagaca	gcrtagtgya	180
gagtgggtatt	tccatactua	tctgggaatat	ttggatcagt	gcoatgttcc	agcaacatta	240
acgcacattc	atcttccctg	cattgtacgg	ctgttcagta	ttagacccaa	aaacaaatta	300
catatcttag	qaattccaaa	taacatlcca	uagctttcac	caactagtta	tatttaagg	360
agaaaactca	tttttalqcc	algtatttga	atcaaacucca	cctcatgctg	atatagttag	420
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cgtctgtcca	gcaggaqltt	laetacttol	qaattcccat	tggcagaggc	cagatgtaga	540
gcagtcctct	qagagtgaga	agaclltlla	ggaaaltgta	gtgcactagc	tucagccata	600
gcaatgattc	atglaanlgc	saacactgaa	tagcctgcla	ctactctgcn	ttcaaauaaa	660
aaabaaaaa						668

<210> 368  
 <211> 1512  
 <212> DNA  
 <213> Homo sapien

## &lt;400&gt; 368

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tgggtgtgce	gttgcctccc	ctgctgcagg	gagagcggca	agagcgaag	gggacttct	360
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gccttcatgg	agccraggta	ccacgtccgt	ggagaagatc	tggacaagct	ccacagagct	660
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actccaagaa	aagttaaaac	tgtttcagtg	aatagagatc	ctgtctcctt	ggcaagttcc	1440
taaaaaacag	taatagatac	gagggtgatgc	gcctgtcagt	ggcaaggttt	aaqatatttc	1500
tgatctcgtg	cc					1512

## &lt;210&gt; 369

## &lt;211&gt; 1853

## &lt;212&gt; DNA

## &lt;213&gt; Homo sapien

## &lt;400&gt; 369

gggtcgccca	gggggsgcgt	gggttttcc	gggttgggtg	tgggttttcc	ctgggttggg	60
tgggttgggc	trgaatcccc	tgtctgggtt	ggcaggtttt	ggcttgggtt	gactttttyc	120
ttcaaacaga	ttggaaaccc	ggagltacot	gctagtltgg	gaaacttgg	ggtagacgcg	180
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tgggtgtgce	gttgcctccc	ctgctgcagg	gagagcggca	agagcgaag	gggacttct	360
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gccttcatgg	agccraggta	ccacgtccrt	ggagaagatc	tggacaagct	ccacagagct	660
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cctatgagac	taggctttga	gantcaataq	attctttttt	taagaaetct	ttgggtagg	1560
gggtgtctc	acgcctgtaa	ttccagcacc	ttggagagct	gaugtgggca	gacacagaga	1620

112

tcaggagatc	gagaccatcc	tggctaacac	ggtgaaaccc	catctctact	aaaaatataa	1680
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ccagcctggg	tgacagagca	agactctgtc	tcaaaaaaaa	aaaaaaaaaa	aaa	1853

<210> 370  
 <211> 2184  
 <212> DNA  
 <213> Homo sapien

<400> 370

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tttccctctga	gaactgcaac	aataaatata	aggatgctgg	attttgtcaa	atgccttttc	180
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gtggcgctga	tggctgagga	cagagcttca	gtgtggcttc	tctgcgactg	gcttctctgg	420
ggagtcttcc	cttcatagtt	catccatatg	gctccagagg	aaaattatat	tattttgtta	480
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ctcaaaaaaa	aaaaaaaaaa	aaaa				2184

<210> 371  
 <211> 1855  
 <212> DNA  
 <213> Homo sapien

<220>  
 <221> misc feature  
 <222> {1}..(1855)  
 <223> n = A,T,C or G

<400> 371

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gocgcccccg	cataacocgc	agactggcct	gtaacggcct	gcaggcgac	gocgacgcg	180
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acctaattat	ctaagacttt	attttaata	ttgttatitt	caaagaagca	ttagagggtg	1560
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<210> 372  
 <211> 1059  
 <212> DNA  
 <213> Homo sapien

<400> 372						
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gcgcttgrgg	agactmogat	gacagygcct	tcatggagcc	caggtaccac	gtccgtggag	180
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<210> 373  
 <211> 1155  
 <212> DNA  
 <213> Homo sapien

<400> 373						
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ctggatagat	atggaaggac	tgtctcata	cttgcgtgat	gttgctggctc	agcaagtata	960
gtcagccttc	tacttgagca	aaatattgat	gtatcttctc	aaagctctatc	tggacagacg	1020
gccagagagt	atgctgtttc	tagtcatcat	catgtaattt	gccagttact	ttctgactac	1080
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accagaaata	aataa					1155

<210> 374  
 <211> 2000  
 <212> DNA  
 <213> Homo sapien

<400> 374						
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ggcgcttctg	gagaccacga	cgactctgct	atgaagacac	tcagggaacaa	gatgggcaag	300
tgtgtctgoc	actgcttccc	ctgctgcagg	gggagcggca	agagcaagggt	gggocgttgg	360
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ctcaggggaca	ctgacgtgaa	caagaaggac	aaagcaaaaga	ggactgctct	acatctggcc	540
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cttaqttgta	agaaagaaaa	agacatcttg	catgaaaata	gtacgttgcg	ggaagaaatt	1920
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aaagaaagaaa	aaagaaagaaa					2000

<210> 375



<211> 2040  
 <212> DNA  
 <213> Homo sapien

<400> 375

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ggcgtctctg	gagaccacga	cgactctgct	atgaagacac	tcaggaaaca	gatgggcaag	300
tgggtgctgcc	actgcttccc	ctgctgcagg	gggagcggca	agagcaagggt	gggcgtttgg	360
ggagactacg	atgacagtgc	cttcatggag	cccagggtacc	acgtccgttg	agaagatctg	420
gacaagctcc	acagagctgc	ctggtggggg	aaagtcccca	gaaaggatct	catogtcatg	480
ctcagggaca	ctgacgtgaa	caagaaggac	aagcnaaaga	ggactgctct	acatctgguc	540
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accactctgc	actacgctat	ctataatgaa	gataaettta	tggccaaagc	actgctctta	780
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gtcagccttc	tacttgagca	aaatattgat	gtatctttct	aaatctctatc	tggacagacg	1020
gccagagagt	atgctgtttc	tagtcatcat	catgtaattt	gccagttact	ttctgactac	1080
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cctgacaacg	aaagtgaaga	gtatcacaga	atttgogaat	tagtttctga	ctacaaagaa	1440
aaacagatgc	caaaatactc	ttctgaaaac	agcaaccag	aaacagactt	aaagctgca	1500
tcagaggaag	agtcacaaaq	guttgagggc	agtgaanaatg	gucagccage	gaasegatct	1560
caageaccag	aaataaataa	ggatgggtgat	agagagctag	aaaaatlltat	ggctatcgaa	1620
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aagcaetttt	gtgaagaaca	gaacactgga	atattacacg	atgagattct	attcatgaa	1860
gaaaagcaga	tgaagtggt	tgaasaaatg	aattctgagc	tttctcttag	ttgtaagaaa	1920
gaaaagacaa	tcttgcatga	aaatagtag	ttgcgggaag	aaattgccat	gctaagaactg	1980
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<210> 376  
 <211> 329  
 <212> PRT  
 <213> Homo sapien

<400> 376

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		20						25					30		
Glu	Tyr	Thr	Ile	Val	His	Ala	Ser	Phe	Ile	Ser	Cys	Ile	Ser	Ser	Ser
	35						40					45			
Leu	Asp	Gly	Gln	Gly	Glu	Arg	Gln	Glu	Gln	Arg	Gly	His	Phe	Trp	Arg
	50					55					60				
Pro	Gln	Arg	Leu	Leu	Cys	Glu	Asp	Ala	Trp	Glu	Gln	Glu	Val	Gln	Val
	65				70				75					80	
Val	Leu	Pro	Leu	Leu	Pro	Leu	Leu	Gln	Gly	Ser	Gly	Lys	Ser	Asn	Val
			85					90						95	
Val	Ala	Trp	Gly	Asp	Tyr	Asp	Asp	Ser	Ala	Phe	Met	Asp	Pro	Arg	Tyr
			100					105					110		
His	Val	His	Gly	Glu	Asp	Leu	Asp	Lys	Leu	His	Arg	Ala	Ala	Trp	Trp
			115					120					125		

116

Gly Lys Val Pro Arg Lys Asp Leu Ile Val Met Leu Arg Asp Thr Asp  
 130 135 140  
 Val Asn Lys Arg Asp Lys Gln Lys Arg Thr Ala Leu His Leu Ala Ser  
 145 150 155 160  
 Ala Asn Gly Asn Ser Glu Val Val Lys Leu Val Leu Asp Arg Arg Cys  
 165 170 175  
 Gln Leu Asn Val Leu Asp Asn Lys Lys Arg Thr Ala Leu Thr Lys Ala  
 180 185 190  
 Val Gln Cys Gln Glu Asp Glu Cys Ala Leu Met Leu Leu Glu His Gly  
 195 200 205  
 Thr Asp Pro Asn Ile Pro Asp Glu Tyr Gly Asn Thr Thr Leu His Tyr  
 210 215 220  
 Ala Val Tyr Asn Glu Asp Lys Leu Met Ala Lys Ala Leu Leu Leu Tyr  
 225 230 235 240  
 Gly Ala Asp Ile Glu Ser Lys Asn Lys His Gly Leu Thr Pro Leu Leu  
 245 250 255  
 Leu Gly Ile His Glu Gln Lys Gln Gln Val Val Lys Phe Leu Ile Lys  
 260 265 270  
 Lys Lys Ala Asn Leu Asn Ala Leu Asp Arg Tyr Gly Arg Thr Ala Leu  
 275 280 285  
 Ile Leu Ala Val Cys Cys Gly Ser Ala Ser Ile Val Ser Pro Leu Leu  
 290 295 300  
 Glu Gln Asn Val Asp Val Ser Ser Gln Asp Leu Glu Arg Arg Pro Glu  
 305 310 315 320  
 Ser Met Leu Phe Leu Val Ile Ile Met  
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<210> 377  
 <211> 148  
 <212> PRT  
 <213> Homo sapien

<220>  
 <221> VARIANT  
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 <223> Xaa = Any Amino Acid

<400> 377  
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 20 25 30  
 Asp Leu Ile Val Met Leu Arg Asp Thr Asp Val Asn Lys Xaa Asp Lys  
 35 40 45  
 Gln Lys Arg Thr Ala Leu His Leu Ala Ser Ala Asn Gly Asn Ser Glu  
 50 55 60  
 Val Val Lys Leu Xaa Leu Asp Arg Arg Cys Gln Leu Asn Val Leu Asp  
 65 70 75 80  
 Asn Lys Lys Arg Thr Ala Leu Xaa Lys Ala Val Gln Cys Gln Glu Asp  
 85 90 95  
 Glu Cys Ala Leu Met Leu Leu Glu His Gly Thr Asp Pro Asn Ile Pro  
 100 105 110  
 Asp Glu Tyr Gly Asn Thr Thr Leu His Tyr Ala Xaa Tyr Asn Glu Asp  
 115 120 125  
 Lys Leu Met Ala Lys Ala Leu Leu Tyr Gly Ala Asp Ile Glu Ser  
 130 135 140  
 Lys Asn Lys Val  
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<210> 378  
 <211> 1719  
 <212> PRT

&lt;213&gt; Homo sapi n

&lt;400&gt; 378

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 20          25          30
Pro Cys Cys Arg Glu Ser Gly Lys Ser Asn Val Gly Thr Ser Gly Asp
 35          40          45
His Asp Asp Ser Ala Met Lys Thr Leu Arg Ser Lys Met Gly Lys Trp
 50          55          60
Cys Arg His Cys Phe Pro Cys Cys Arg Gly Ser Gly Lys Ser Asn Val
 65          70          75          80
Gly Ala Ser Gly Asp His Asp Asp Ser Ala Met Lys Thr Leu Arg Asn
 85          90          95
Lys Met Gly Lys Trp Cys Cys His Cys Phe Pro Cys Cys Arg Gly Ser
100          105          110
Gly Lys Ser Lys Val Gly Ala Trp Gly Asp Tyr Asp Asp Ser Ala Phe
115          120          125
Met Glu Pro Arg Tyr His Val Arg Gly Glu Asp Leu Asp Lys Leu His
130          135          140
Arg Ala Ala Trp Trp Gly Lys Val Pro Arg Lys Asp Leu Ile Val Met
145          150          155          160
Leu Arg Asp Thr Asp Val Asn Lys Lys Asp Lys Gln Lys Arg Thr Ala
165          170          175
Leu His Leu Ala Ser Ala Asn Gly Asn Ser Glu Val Val Lys Leu Leu
180          185          190
Leu Asp Arg Arg Cys Gln Leu Asn Val Leu Asp Asn Lys Lys Arg Thr
195          200          205
Ala Leu Ile Lys Ala Val Cln Cys Gln Glu Asp Glu Cys Ala Leu Met
210          215          220
Leu Leu Glu His Gly Thr Asp Pro Asn Ile Pro Asp Glu Tyr Gly Asn
225          230          235          240
Thr Thr Leu His Tyr Ala Ile Tyr Asn Glu Asp Lys Leu Met Ala Lys
245          250          255
Ala Leu Leu Leu Tyr Gly Ala Asp Ile Glu Ser Lys Asn Lys His Gly
260          265          270
Leu Thr Pro Leu Leu Leu Gly Val His Glu Gln Lys Gln Gln Val Val
275          280          285
Lys Phe Leu Ile Lys Lys Lys Ala Asn Leu Asn Ala Leu Asp Arg Tyr
290          295          300
Gly Arg Thr Ala Leu Ile Leu Ala Val Cys Cys Gly Ser Ala Ser Ile
305          310          315          320
Val Ser Leu Leu Leu Glu Gln Asn Ile Asp Val Ser Ser Gln Asp Leu
325          330          335
Ser Gly Gln Thr Ala Arg Glu Tyr Ala Val Ser Ser His His His Val
340          345          350
Ile Cys Gln Leu Leu Ser Asp Tyr Lys Glu Lys Gln Met Leu Lys Ile
355          360          365
Ser Ser Glu Asn Ser Asn Pro Glu Asn Val Ser Arg Thr Arg Asn Lys
370          375          380
Pro Arg Thr His Met Val Val Glu Val Asp Ser Met Pro Ala Ala Ser
385          390          395          400
Ser Val Lys Lys Pro Phe Gly Leu Arg Ser Lys Met Gly Lys Trp Cys
405          410          415
Cys Arg Cys Phe Pro Cys Cys Arg Glu Ser Gly Lys Ser Asn Val Gly
420          425          430
Thr Ser Gly Asp His Asp Asp Ser Ala Met Lys Thr Leu Arg Ser Lys
435          440          445
M t Gly Lys Trp Cys Arg His Cys Phe Pro Cys Cys Arg Gly Ser Gly
450          455          460
Lys Ser Asn Val Gly Ala Ser Gly Asp His Asp Asp S r Ala Met Lys

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465 470 475 480  
 Thr Leu Arg Asn Lys Met Gly Lys Trp Cys Cys His Cys Phe Pro Cys  
 485 490 495  
 Cys Arg Gly Ser Gly Lys Ser Lys Val Gly Ala Trp Gly Asp Tyr Asp  
 500 505 510  
 Asp Ser Ala Phe Met Glu Pro Arg Tyr His Val Arg Gly Glu Asp Leu  
 515 520 525  
 Asp Lys Leu His Arg Ala Ala Trp Trp Gly Lys Val Pro Arg Lys Asp  
 530 535 540  
 Leu Ile Val Met Leu Arg Asp Thr Asp Val Asn Lys Lys Asp Lys Gln  
 545 550 555 560  
 Lys Arg Thr Ala Leu His Leu Ala Ser Ala Asn Gly Asn Ser Glu Val  
 565 570 575  
 Val Lys Leu Leu Leu Asp Arg Arg Cys Gln Leu Asn Val Leu Asp Asn  
 580 585 590  
 Lys Lys Arg Thr Ala Leu Ile Lys Ala Val Gln Cys Gln Glu Asp Glu  
 595 600 605  
 Cys Ala Leu Met Leu Leu Glu His Gly Thr Asp Pro Asn Ile Pro Asp  
 610 615 620  
 Glu Tyr Gly Asn Thr Thr Leu His Tyr Ala Ile Tyr Asn Glu Asp Lys  
 625 630 635 640  
 Leu Met Ala Lys Ala Leu Leu Leu Tyr Gly Ala Asp Ile Glu Ser Lys  
 645 650 655  
 Asn Lys His Gly Leu Thr Pro Leu Leu Gly Val His Glu Gln Lys  
 660 665 670  
 Gln Gln Val Val Lys Phe Leu Ile Lys Lys Lys Ala Asn Leu Asn Ala  
 675 680 685  
 Leu Asp Arg Tyr Gly Arg Thr Ala Leu Ile Leu Ala Val Cys Cys Gly  
 690 695 700  
 Ser Ala Ser Ile Val Ser Leu Leu Leu Glu Cln Asn Ile Asp Val Ser  
 705 710 715 720  
 Ser Gln Asp Leu Ser Gly Gln Thr Ala Arg Glu Tyr Ala Val Ser Ser  
 725 730 735  
 His His His Val Ile Cys Gln Leu Leu Ser Asp Tyr Lys Glu Lys Gln  
 740 745 750  
 Met Leu Lys Ile Ser Ser Glu Asn Ser Asn Pro Glu Gln Asp Leu Lys  
 755 760 765  
 Leu Thr Ser Glu Glu Glu Ser Gln Arg Phe Lys Gly Ser Glu Asn Ser  
 770 775 780  
 Gln Pro Glu Lys Met Ser Gln Glu Pro Glu Ile Asn Lys Asp Gly Asp  
 785 790 795 800  
 Arg Glu Val Glu Glu Glu Met Lys Lys His Glu Ser Asn Asn Val Gly  
 805 810 815  
 Leu Leu Glu Asn Leu Thr Asn Gly Val Thr Ala Gly Asn Gly Asp Asn  
 820 825 830  
 Gly Leu Ile Pro Gln Arg Lys Ser Arg Thr Pro Glu Asn Gln Gln Phe  
 835 840 845  
 Pro Asp Asn Glu Ser Glu Glu Tyr His Arg Ile Cys Glu Leu Val Ser  
 850 855 860  
 Asp Tyr Lys Glu Lys Gln Met Pro Lys Tyr Ser Ser Glu Asn Ser Asn  
 865 870 875 880  
 Pro Glu Gln Asp Leu Lys Leu Thr Ser Glu Glu Glu Ser Gln Arg Leu  
 885 890 895  
 Glu Gly Ser Glu Asn Gly Gln Pro Glu Leu Glu Asn Phe Met Ala Ile  
 900 905 910  
 Glu Glu Met Lys Lys His Gly Ser Thr His Val Gly Phe Pro Glu Asn  
 915 920 925  
 Leu Thr Asn Gly Ala Thr Ala Gly Asn Gly Asp Asp Gly Leu Ile Pro  
 930 935 940  
 Pro Arg Lys Ser Arg Thr Pro Glu Ser Gln Gln Phe Pro Asp Thr Glu  
 945 950 955 960  
 Asn Glu Glu Tyr His S r Asp Glu Gln Asn Asp Thr Gln Lys Gln Phe

	965		970		975
Cys Glu Glu Gln	Asn Thr Gly Ile Leu	His Asp Glu Ile Leu	Ile His		
	980		985		990
Glu Glu Lys Gln	Ile Glu Val Val Glu	Lys Met Asn Ser Glu	Leu Ser		
	995		1000		1005
Leu Ser Cys Lys	Lys Glu Lys Asp Ile Leu	His Glu Asn Ser Thr	Leu		
	1010		1015		1020
Arg Glu Glu Ile	Ala Met Leu Arg Leu	Glu Leu Asp Thr Met	Lys His		
	1025		1030		1035
Gln Ser Gln Leu	Pro Arg Thr His Met Val	Val Glu Val Asp Ser	Met		
	1045		1050		1055
Pro Ala Ala Ser	Ser Val Lys Lys Pro Phe	Gly Leu Arg Ser Lys	Met		
	1060		1065		1070
Gly Lys Trp Cys	Cys Arg Cys Phe Pro Cys	Cys Arg Glu Ser Gly	Lys		
	1075		1080		1085
Ser Asn Val Gly	Thr Ser Gly Asp His Asp	Asp Ser Ala Met Lys	Thr		
	1090		1095		1100
Leu Arg Ser Lys	Met Gly Lys Trp Cys Arg	His Cys Phe Pro Cys	Cys		
	1105		1110		1115
Arg Gly Ser Gly	Lys Ser Asn Val Gly Ala	Ser Gly Asp His Asp	Asp		
	1125		1130		1135
Ser Ala Met Lys	Thr Leu Arg Asn Lys Met	Gly Lys Trp Cys Cys	His		
	1140		1145		1150
Cys Phe Pro Cys	Cys Arg Gly Ser Gly Lys	Ser Lys Val Gly Ala	Trp		
	1155		1160		1165
Gly Asp Tyr Asp	Asp Ser Ala Phe Met Glu	Pro Arg Tyr His Val	Arg		
	1170		1175		1180
Gly Glu Asp Leu	Asp Lys Leu His Arg Ala	Ala Trp Trp Gly Lys	Val		
	1185		1190		1195
Pro Arg Lys Asp	Leu Ile Val Met Leu Arg	Asp Thr Asp Val Asn	Lys		
	1205		1210		1215
Lys Asp Lys Gln	Lys Arg Thr Ala Leu His	Leu Ala Ser Ala Asn	Gly		
	1220		1225		1230
Asn Ser Glu Val	Val Lys Leu Leu Leu Asp	Arg Arg Cys Gln Leu	Asn		
	1235		1240		1245
Val Leu Asp Asn	Lys Lys Arg Thr Ala Leu	Ile Lys Ala Val Gln	Cys		
	1250		1255		1260
Gln Glu Asp Glu	Cys Ala Leu Met Leu Leu	Glu His Gly Thr Asp	Pro		
	1265		1270		1275
Asn Ile Pro Asp	Glu Tyr Gly Asn Thr Thr	Leu His Tyr Ala Ile	Tyr		
	1285		1290		1295
Asn Glu Asp Lys	Leu Met Ala Lys Ala Leu	Leu Leu Tyr Gly Ala	Asp		
	1300		1305		1310
Ile Glu Ser Lys	Asn Lys His Gly Leu Thr	Pro Leu Leu Leu Gly	Val		
	1315		1320		1325
His Glu Gln Lys	Gln Gln Val Val Lys Phe	Leu Ile Lys Lys Lys	Ala		
	1330		1335		1340
Asn Leu Asn Ala	Leu Asp Arg Tyr Gly Arg	Thr Ala Leu Ile Leu	Ala		
	1345		1350		1355
Val Cys Cys Gly	Ser Ala Ser Ile Val Ser	Leu Leu Leu Glu Gln	Asn		
	1365		1370		1375
Ile Asp Val Ser	Ser Gln Asp Leu Ser Gly	Gln Thr Ala Arg Glu	Tyr		
	1380		1385		1390
Ala Val Ser Ser	His His His Val Ile Cys	Gln Leu Leu Ser Asp	Tyr		
	1395		1400		1405
Lys Glu Lys Gln	Met Leu Lys Ile Ser Ser	Glu Asn Ser Asn Pro	Glu		
	1410		1415		1420
Gln Asp L u Lys	Leu Thr Ser Glu Glu Glu	Ser Gln Arg Phe Lys	Gly		
	1425		1430		1435
S r Clu Asn Ser	Gln Pro Glu Lys Met Ser	Gln Glu Pro Glu Il	Asn		
	1445		1450		1455
Lys Asp Gly Asp	Arg Glu Val Glu Glu Glu	Met Lys Lys His Glu	Ser		

120

1460                      1465                      1470  
 Asn Asn Val Gly Leu Leu Glu Asn Leu Thr Asn Gly Val Thr Ala Gly  
                          1475                      1480                      1485  
 Asn Gly Asp Asn Gly Leu Ile Pro Gln Arg Lys Ser Arg Thr Pro Glu  
                          1490                      1495                      1500  
 Asn Gln Gln Phe Pro Asp Asn Glu Ser Glu Glu Tyr His Arg Ile Cys  
 1505                      1510                      1515                      152  
 Glu Leu Val Ser Asp Tyr Lys Glu Lys Gln Met Pro Lys Tyr Ser Ser  
                          1525                      1530                      1535  
 Glu Asn Ser Asn Pro Glu Gln Asp Leu Lys Leu Thr Ser Glu Glu Glu  
                          1540                      1545                      1550  
 Ser Gln Arg Leu Glu Gly Ser Glu Asn Cys Gln Pro Glu Lys Arg Ser  
                          1555                      1560                      1565  
 Gln Glu Pro Glu Ile Asn Lys Asp Gly Asp Arg Glu Leu Glu Asn Phe  
 1570                      1575                      1580  
 Met Ala Ile Glu Glu Met Lys Lys His Gly Ser Thr His Val Gly Phe  
 1585                      1590                      1595                      160  
 Pro Glu Asn Leu Thr Asn Gly Ala Thr Ala Gly Asn Gly Asp Asp Gly  
                          1605                      1610                      1615  
 Leu Ile Pro Pro Arg Lys Ser Arg Thr Pro Glu Ser Gln Gln Phe Pro  
                          1620                      1625                      1630  
 Asp Thr Glu Asn Glu Glu Tyr His Ser Asp Glu Gln Asn Asp Thr Gln  
                          1635                      1640                      1645  
 Lys Gln Phe Cys Glu Glu Gln Asn Thr Gly Ile Leu His Asp Glu Ile  
 1650                      1655                      1660  
 Leu Ile His Glu Glu Lys Gln Ile Glu Val Val Glu Lys Met Asn Ser  
 1665                      1670                      1675                      168  
 Glu Leu Ser Leu Ser Cys Lys Lys Glu Lys Asp Ile Leu His Glu Asn  
                          1685                      1690                      1695  
 Ser Thr Leu Arg Glu Glu Ile Ala Met Leu Arg Leu Glu Leu Asp Thr  
                          1700                      1705                      1710  
 Met Lys His Gln Ser Gln Leu  
 1715

<210> 379  
 <211> 656  
 <212> PRT  
 <213> Homo sapien

<400> 379  
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                          20                      25                      30  
 Pro Cys Cys Arg Glu Ser Gly Lys Ser Asn Val Gly Thr Ser Gly Asp  
                          35                      40                      45  
 His Asp Asp Ser Ala Met Lys Thr Leu Arg Ser Lys Met Gly Lys Trp  
 50                      55                      60  
 Cys Arg His Cys Phe Pro Cys Cys Arg Gly Ser Gly Lys Ser Asn Val  
 65                      70                      75                      80  
 Gly Ala Ser Gly Asp His Asp Asp Ser Ala Met Lys Thr Leu Arg Asn  
                          85                      90                      95  
 Lys Met Gly Lys Trp Cys Cys His Cys Phe Pro Cys Cys Arg Gly Ser  
                          100                      105                      110  
 Gly Lys Ser Lys Val Gly Ala Trp Gly Asp Tyr Asp Asp Ser Ala Phe  
                          115                      120                      125  
 Met Glu Pro Arg Tyr His Val Arg Gly Glu Asp Leu Asp Lys Leu His  
 130                      135                      140  
 Arg Ala Ala Trp Trp Gly Lys Val Pro Arg Lys Asp Leu Ile Val Met  
 145                      150                      155                      160  
 Leu Arg Asp Thr Asp Val Asn Lys Lys Asp Lys Gln Lys Arg Thr Ala  
                          165                      170                      175

Leu His L u Ala Ser Ala Asn Gly Asn Ser Glu Val Val Lys Leu Leu  
 180 185 190  
 Leu Asp Arg Arg Cys Gln Leu Asn Val Leu Asp Asn Lys Lys Arg Thr  
 195 200 205  
 Ala Leu Ile Lys Ala Val Gln Cys Gln Glu Asp Glu Cys Ala Leu Met  
 210 215 220  
 Leu Leu Glu His Gly Thr Asp Pro Asn Ile Pro Asp Glu Tyr Gly Asn  
 225 230 235 240  
 Thr Thr Leu His Tyr Ala Ile Tyr Asn Glu Asp Lys Leu Met Ala Lys  
 245 250 255  
 Ala Leu Leu Leu Tyr Gly Ala Asp Ile Glu Ser Lys Asn Lys His Gly  
 260 265 270  
 Leu Thr Pro Leu Leu Leu Gly Val His Glu Gln Lys Gln Gln Val Val  
 275 280 285  
 Lys Phe Leu Ile Lys Lys Lys Ala Asn Leu Asn Ala Leu Asp Arg Tyr  
 290 295 300  
 Gly Arg Thr Ala Leu Ile Leu Ala Val Cys Cys Gly Ser Ala Ser Ile  
 305 310 315 320  
 Val Ser Leu Leu Leu Glu Gln Asn Ile Asp Val Ser Ser Gln Asp Leu  
 325 330 335  
 Ser Gly Gln Thr Ala Arg Glu Tyr Ala Val Ser Ser His His His Val  
 340 345 350  
 Ile Cys Gln Leu Leu Ser Asp Tyr Lys Glu Lys Gln Met Leu Lys Ile  
 355 360 365  
 Ser Ser Glu Asn Ser Asn Pro Glu Gln Asp Leu Lys Leu Thr Ser Glu  
 370 375 380  
 Glu Glu Ser Gln Arg Phe Lys Gly Ser Glu Asn Ser Gln Pro Glu Lys  
 385 390 395 400  
 Met Ser Gln Glu Pro Glu Ile Asn Lys Asp Gly Asp Arg Glu Val Glu  
 405 410 415  
 Glu Glu Met Lys Lys His Glu Ser Asn Asn Val Gly Leu Leu Glu Asn  
 420 425 430  
 Leu Thr Asn Gly Val Thr Ala Gly Asn Gly Asp Asn Gly Leu Ile Pro  
 435 440 445  
 Gln Arg Lys Ser Arg Thr Pro Glu Asn Gln Gln Phe Pro Asp Asn Glu  
 450 455 460  
 Ser Glu Glu Tyr His Arg Ile Cys Glu Leu Val Ser Asp Tyr Lys Glu  
 465 470 475 480  
 Lys Gln Met Pro Lys Tyr Ser Ser Glu Asn Ser Asn Pro Glu Gln Asp  
 485 490 495  
 Leu Lys Leu Thr Ser Glu Glu Glu Ser Gln Arg Leu Glu Gly Ser Glu  
 500 505 510  
 Asn Gly Gln Pro Glu Leu Glu Asn Phe Met Ala Ile Glu Glu Met Lys  
 515 520 525  
 Lys His Gly Ser Thr His Val Gly Phe Pro Glu Asn Leu Thr Asn Gly  
 530 535 540  
 Ala Thr Ala Gly Asn Gly Asp Asp Gly Leu Ile Pro Pro Arg Lys Ser  
 545 550 555 560  
 Arg Thr Pro Glu Ser Gln Gln Phe Pro Asp Thr Glu Asn Glu Glu Tyr  
 565 570 575  
 His Ser Asp Glu Gln Asn Asp Thr Gln Lys Gln Phe Cys Glu Glu Gln  
 580 585 590  
 Asn Thr Gly Ile Leu His Asp Glu Ile Leu Ile His Glu Glu Lys Gln  
 595 600 605  
 Ile Glu Val Val Glu Lys Met Asn Ser Glu Leu Ser Leu Ser Cys Lys  
 610 615 620  
 Lys Glu Lys Asp Ile Leu His Glu Asn Ser Thr Leu Arg Glu Glu Ile  
 625 630 635 640  
 Ala Met Leu Arg Leu Glu Leu Asp Thr Met Lys His Gln Ser Gln Leu  
 645 650 655

&lt;210&gt; 380

<211> 671  
 <212> PRT  
 <213> Homo sapien

<400> 380  
 Met Val Val Glu Val Asp Ser Met Pro Ala Ala Ser Ser Val Lys Lys  
 1 5 10 15  
 Pro Phe Gly Leu Arg Ser Lys Met Gly Lys Trp Cys Cys Arg Cys Phe  
 20 25 30  
 Pro Cys Cys Arg Glu Ser Gly Lys Ser Asn Val Gly Thr Ser Gly Asp  
 35 40 45  
 His Asp Asp Ser Ala Met Lys Thr Leu Arg Ser Lys Met Gly Lys Trp  
 50 55 60  
 Cys Arg His Cys Phe Pro Cys Cys Arg Gly Ser Gly Lys Ser Asn Val  
 65 70 75 80  
 Gly Ala Ser Gly Asp His Asp Asp Ser Ala Met Lys Thr Leu Arg Asn  
 85 90 95  
 Lys Met Gly Lys Trp Cys Cys His Cys Phe Pro Cys Cys Arg Gly Ser  
 100 105 110  
 Gly Lys Ser Lys Val Gly Ala Trp Gly Asp Tyr Asp Asp Ser Ala Phe  
 115 120 125  
 Met Glu Pro Arg Tyr His Val Arg Gly Glu Asp Leu Asp Lys Leu His  
 130 135 140  
 Arg Ala Ala Trp Trp Gly Lys Val Pro Arg Lys Asp Leu Ile Val Met  
 145 150 155 160  
 Leu Arg Asp Thr Asp Val Asn Lys Lys Asp Lys Gln Lys Arg Thr Ala  
 165 170 175  
 Leu His Leu Ala Ser Ala Asn Gly Asn Ser Glu Val Val Lys Leu Leu  
 180 185 190  
 Leu Asp Arg Arg Cys Gln Leu Asn Val Leu Asp Asn Lys Lys Arg Thr  
 195 200 205  
 Ala Leu Ile Lys Ala Val Gln Cys Gln Glu Asp Glu Cys Ala Leu Met  
 210 215 220  
 Leu Leu Glu His Gly Thr Asp Pro Asn Ile Pro Asp Glu Tyr Gly Asn  
 225 230 235 240  
 Thr Thr Leu His Tyr Ala Ile Tyr Asn Glu Asp Lys Leu Met Ala Lys  
 245 250 255  
 Ala Leu Leu Leu Tyr Gly Ala Asp Ile Glu Ser Lys Asn Lys His Gly  
 260 265 270  
 Leu Thr Pro Leu Leu Leu Gly Val His Glu Gln Lys Gln Gln Val Val  
 275 280 285  
 Lys Phe Leu Ile Lys Lys Lys Ala Asn Leu Asn Ala Leu Asp Arg Tyr  
 290 295 300  
 Gly Arg Thr Ala Leu Ile Leu Ala Val Cys Cys Gly Ser Ala Ser Ile  
 305 310 315 320  
 Val Ser Leu Leu Leu Glu Gln Asn Ile Asp Val Ser Ser Gln Asp Leu  
 325 330 335  
 Ser Gly Gln Thr Ala Arg Glu Tyr Ala Val Ser Ser His His His Val  
 340 345 350  
 Ile Cys Gln Leu Leu Ser Asp Tyr Lys Glu Lys Gln Met Leu Lys Ile  
 355 360 365  
 Ser Ser Glu Asn Ser Asn Pro Glu Gln Asp Leu Lys Leu Thr Ser Glu  
 370 375 380  
 Glu Glu Ser Gln Arg Phe Lys Gly Ser Glu Asn Ser Gln Pro Glu Lys  
 385 390 395 400  
 Met Ser Gln Glu Pro Glu Ile Asn Lys Asp Gly Asp Arg Glu Val Glu  
 405 410 415  
 Glu Glu Met Lys Lys His Glu Ser Asn Asn Val Gly Leu Leu Glu Asn  
 420 425 430  
 Leu Thr Asn Gly Val Thr Ala Gly Asn Gly Asp Asn Gly Leu Ile Pro  
 435 440 445  
 Gln Arg Lys Ser Arg Thr Pro Glu Asn Gln Gln Phe Pro Asp Asn Glu



450	Ser Glu Glu Tyr His Arg	455	Ile Cys Glu Leu Val	460	Ser Asp Tyr Lys Glu
465	Lys Gln Met Pro Lys Tyr Ser Ser	470	Glu Asn Ser Asn Pro Glu Gln Asp	475	480
	485	490		495	
Leu Lys Leu Thr Ser Glu Glu Glu	500	505	Ser Gln Arg Leu Glu Gly Ser Glu	510	
Asn Gly Gln Pro Glu Lys Arg Ser	515	520	Gln Glu Pro Glu Ile Asn Lys Asp	525	
Gly Asp Arg Glu Leu Glu Asn Phe	530	535	Met Ala Ile Glu Glu Met Lys Lys	540	
His Gly Ser Thr His Val Gly Phe	545	550	Pro Glu Asn Leu Thr Asn Gly Ala	555	560
Thr Ala Gly Asn Gly Asp Asp Gly	565	570	Leu Ile Pro Pro Arg Lys Ser Arg	575	
Thr Pro Glu Ser Gln Gln Phe Pro	580	585	Asp Thr Glu Asn Glu Glu Tyr His	590	
Ser Asp Glu Gln Asn Asp Thr Gln	595	600	Lys Gln Phe Cys Glu Glu Gln Asn	605	
Thr Gly Ile Leu His Asp Glu Ile	610	615	Leu Ile His Glu Glu Lys Gln Ile	620	
Glu Val Val Glu Lys Met Asn Ser	625	630	Glu Leu Ser Leu Ser Cys Lys Lys	635	640
Glu Lys Asp Ile Leu His Glu Asn	645	650	Ser Thr Leu Arg Glu Glu Ile Ala	655	
Met Leu Arg Leu Glu Leu Asp Thr	660	665	Met Lys His Gln Ser Gln Leu	670	

<210> 381  
 <211> 251  
 <212> DNA  
 <213> Homo sapien

<400> 381	
ggagaagcgt ctgctggggc aggaaggggt ttccctgcc tctcacctgt ccttcaccaa	60
ggtaacatgc ttcccttaag ggtatcccaa cccaggggcc tcaccatgac ctctgagggg	120
ccaatatccc aggagaagca ttggggagtt gggggcaggt gaaggaccca ggactcacac	180
atcctggggc tccaaggcag aggagagggg cctcaagaag gtcaggagga aatccgtaa	240
caagcagtca g	251

<210> 382  
 <211> 3279  
 <212> DNA  
 <213> Homo sapiens

<400> 382	
cttcctgcag ccccccctgt gglgaggggc acgagcagga acagtggacc caacatggaa	60
atgclaggagg gtgtcaggaa gtatcgggc tctggggcag ggaggagggg tggggagtgt	120
cactgggagg ggacatcctg cagagggtag gagtggcga acacccgctg caggggaggg	180
ggagcccctg cggcacctgg gggagcagag ggagcagcac ctgccaggc ctgggaggag	240
gggcctggag ggcgtgagga ggagcgaggg ggctgcattg ctggagttag ggatcagggg	300
cagggcgcga gatggcctca cacagggaag agagggcccc tctgcaggg cctcacctgg	360
gccaacaggag gacactgctt ttctcttag gagttaggag ctgtggatgg tgctggacag	420
aagaaggaca gggcctggct cagggtgtcc gaggtgtctg ctggcttccc ttggggatca	480
gactgcaggg agggagggcg gcagggttgt ggggggagtg acgatgagga tgacctgggg	540
gtggctccag gccttgcccc tgctggggc ctcacccagc ctccctcaca gtctcctggc	600
cctcagttc tccctccac tccatctcc atctggcctc agtgggtcat tctgatcact	660
gaactgacca taccagccc tgcccacggc cctccatggc tccccaatgc cctggagagg	720
ggacatctag tcagagagta gtctgaaga ggtggcctct gcgatgtgoc tgtgggggca	780
gcactctgca gatggctccg gccctcatcc tgctgacctg tctgcaggga ctgtctcct	840
ggaccttgcc ccttgtgcag gactgggacc ctgaagtcac ctccccatag gccaagactg	900
gagccttgtt cctctgtgtg gactccctgc ccatattctt gggggagtgg gttctggaqa	960

```

catttctgtc tgllectgag agctgggaat tgcctcagc catctgectg cgcgggtctg 1020
agagatggag ttgcctagac agttattggg gccaatcttt ctactgtgt ctctcctcct 1080
ttaaccttag gglgattctg ggggtccact tgcctgtaat ggtgtgcttc aaggtatcac 1140
atcatggggc cctgagccat gtgacctgac tgaanaagcct gctgtgtaca ccaaggtggt 1200
gcaltacccg aagtgagaca aggaacacat cgcagccaac cctgagtgcc cctgtccca 1260
cccctacctc tggtaatttt aagtcacact cactttcttg gctgtgtgca cctttctgga 1320
tgcctgacac ctgaagcttg gaactcactt ggcggaagct cgagcctcct gagtccctact 1380
gacctgtgct ttctggtgtg gaagtcacgg ctgctaggaa aaggaatggg cagacacagg 1440
tgtatgccaa tglttctgaa atgggtataa ttctgctc tccttcggaa cactggctgt 1500
ctctgaagac ttctgctca gtllcagtg aagacacac tygaagagt gacagtaca 1560
tgtttgtggg gtgcagagat ggggggggtg gggccacac tygaagagt gacagtaca 1620
caaggtggac actctctaca gatcactgag gataagctgg aqccacact catgaggcac 1680
acacacagca aggttgagc aaagaagggg aggatcctcc tctgaggggc actgggaagc 1740
ctagataaag ccgtgagcag tgattaatta caggaggttc tagcaggact atactgaaat 1800
tagggtggag gatgatttcc tagcaggact gataggatag aactgacagt acgaagact 1860
ttattatggt ttgttacatt gataggatag aactgacagt acgaagact 1920
tagattagag tgtggagaaa acagaggaaa gcaggaaagc aaggtggggg cctttccctt 1980
tttactaagt ttgcagacty aggaactagc caggtggggg acagcatata attctccctg 2040
gtagctgac cagctgata cgttattct tacaagtaa ttccaactga ggaagctcac 2100
gcataccga cagttattct tacaagtaa ttccaactga ggaagctcac 2160
caaggtatga tgataatat gggctctgag ttccaacaga tacagcatgg 2220
gtgtccaggg ttttactgg agacctgag ttcatcaca atcccatctt tagcatgaag 2280
tgaagtcctc aaacagggg ccaagataa tgggcagaac atgccaagga atcaaatgtc 2340
cagatgtaca gggccaggc agttattca ttctgtggg ggggaaggga gaggatgagg 2400
ggcccaaggc atctccagg agttattca ttctgtggg ggggaaggga gaggatgagg 2460
atctccagg agttattca ttctgtggg ggggaaggga gaggatgagg 2520
gcaggcclgc aggtcacc ttctgtggg ggggaaggga gaggatgagg 2580
aagccccctt ggggattlqg ttctgtggg ggggaaggga gaggatgagg 2640
aaagaagaat ccagaaatag gggcacattg aggaatgata ctatccctac 2700
atcattgttt tatttgcctt ctttcacac ctttgcctag ctatccctac 2760
gttatgaaga tggttgaaca cccacacat agacccggag atatgagatc 2820
tagccataga gattcacagc ccagagcagg aggacgctgc acaccatgca ggtgacatg 2880
ggggatgccc tgggatttg tgtgaagaag caaggactgt tagaggcagg ctttatagta 2940
acaagaaggt ggggcaaac ctgatttccg tgggggaatg tcatggtctt gctttactaa 3000
gttttgagac tggcaggtag tgaactcat taggctgaga accttgtgga atgcagctga 3060
cccagctgat agaggaagta gccaggtggg agcctttccc agtgggtgtg ggacatatct 3120
ggcaagatgt tgtggcactc ctggttacag atactgggc agcaataaa actgaatctt 3180
gttttcagac cttaaaaaa aaaaaaa aaaaagtttt 3240

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&lt;210&gt; 383

&lt;211&gt; 155

&lt;212&gt; PR3

&lt;213&gt; Homo sapiens

&lt;400&gt; 383

```

Met Ala Gly Val Arg Asp Gln Gly Gln Gly Ala Arg Trp Pro His Thr
      5              10              15

```

```

Gly Lys Arg Gly Pro Leu Leu Gln Gly Leu Thr Trp Ala Thr Gly Gly
      20              25              30

```

```

His Cys Phe Ser Ser Glu Glu Ser Gly Ala Val Asp Gly Ala Gly Gln
      35              40              45

```

```

Lys Lys Asp Arg Ala Trp Leu Arg Cys Pro Glu Ala Val Ala Gly Phe
      50              55              60

```

```

Pro Leu Gly Ser Asp Cys Arg Glu Gly Gly Arg Gln Gly Cys Gly Gly
      65              70              75              80

```

```

Ser Asp Asp Glu Asp Asp Leu Gly Val Ala Pro Gly Leu Ala Pro Ala

```

125

	85		90		95
Trp Ala Leu Thr Gln Pro Pro S r Gln Ser Pro Gly Pro Gln S r Leu					
	100		105		110
Pro Ser Thr Pro Ser Ser Ile Trp Pro Gln Trp Val Ile Leu Ile Thr					
	115		120		125
Glu Leu Thr Ile Pro Ser Pro Ala His Gly Pro Pro Trp Leu Pro Asn					
	130		135		140
Ala Leu Glu Arg Gly His Leu Val Arg Glu					
	145		150		

<210> 384  
 <211> 557  
 <212> DNA  
 <213> Homo sapiens

<400> 384  
 ggatcctcta gagcgccgc ctactactac taaattcgcg gccgcgtcga cgaagaagag 60  
 aaagatgtgt ttgttttggt actctctgtg gtcccttcca atgctgtggg ttccaacca 120  
 ggggaagggt ccccttttgc ttgccaaagt ccataaccat gagcaactact ctaccatggt 180  
 tctgectcct ggccaagcag gctggtttgc aagaatgaaa tgaatgattc tacagctagg 240  
 acttaacott gaaatggaaa gtcttgcaat ccattttgca ggatccgtct gtgcacatgc 300  
 ctctgtagag agcagcattc ccagggaacct tggaaacagt tggcaactga aggtgcttgc 360  
 tccccaagac acatccctaaa aggtgtttgt atggtgaaaa cgtcttccct ctttatfccc 420  
 ccttcttatt tatgtgaaca actgtttgtc tttttttgta tcttttttaa actgtaaaat 480  
 tcaattgtga aatgcaatct catgcacata acttatgaga ttttttttct aaagtacaaa 540  
 aaaaaaa 557

<210> 385  
 <211> 337  
 <212> DNA  
 <213> Homo sapiens

<400> 385  
 ttcccagggt atgtgcgagg gaagacacat ttactatcct tgatggggct gattccttta 60  
 gtttctctag cagcagatgg gttaggagga agtgacccaa gtggttgact cctatgtgca 120  
 totcaaagcc atctgctgtc ttcgagtaag gacacatcat cactcctgca ttgttgatca 180  
 aaacgtggag gtgcttttcc tcagctaaga agcccttagc azaagctcga atagacttag 240  
 tatcagacag gtccagtttc cgcaccaaca cctgctggtt cctgtgctg glctggatct 300  
 ctttgccac caattccccc ttttccacat cccgcg 337

<210> 386  
 <211> 300  
 <212> DNA  
 <213> Homo sapiens

<400> 386  
 gggcccgcta ccggcccagg cccgcctctg cgagtccctc tcccgggtg cctgcccga 60  
 gccgcctcgg ccagaggggt gggcgcgggg ctgectctac cggctggcgg ctgtaactca 120  
 gcgaccttgg ccgaagggt ctagcaagga cccaccgacc ccagccggg cggcgccggc 180  
 gcggactttg cccggtgtgt ggggcggagc ggactgctg tccgcggaag ggcagcgaag 240  
 atgttagcct tgcctgccag gaccgtggac cgatcccagg gctgtggtgt aacctcagcc 300

<210> 387  
 <211> 537  
 <212> DNA  
 <213> Homo sapiens

&lt;400&gt; 387

```

gggcccagtc gggcaccag ggactctttg caggetteet tcoctcggatc atcaaggctg 60
ccccctctg tgcctcatg atcagcacet atgagttcgg caaaagcttc ttccagaggc 120
tgaaccaggc cccgctctct ggcggctgaa aggggcaagg aggcaggac cccgtctctc 180
caccggatgg gggaggggca gggaggagcc cagccaagtg ccttttcttc agcactgagg 240
gagggggctt gtttcccttc cctcccgagg acagctcca gggcagggt gtccctctgg 300
gcggcccagc acttctctcg acacacactt ttcctgctgc tccagtcgtg gggatcatca 360
cttaccacc ccccaggttc aagacaaat ctccagctg cccctctcgt gtttccctgt 420
gtttgctgta gctgggcatg tctccaggaa ccaaggagcc ctccagctgg tgtagtctcc 480
ctgacccctg ttaatttctt aagtctaaag atgatgaact tcaaaaaaa aaaaaaa 537

```

&lt;210&gt; 388

&lt;211&gt; 520

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 388

```

aggataattt ttaaaccaat caaatgaaa aaacaaacaa acaaaaaagg aatgtctatg 60
tgaggttaaa ccagtttgca ttccoctaat gtggaaaaag taagaggact actcagcact 120
gtttgaagat tgctctctct acagcttctg agaatttgtt tatttcaatt gccagtgaa 180
ggaccccttc ccaacatgc cccagccac cctaagcat ggtcccttgt caccaggcaa 240
ccaggaaact gctacttgtg gacctacaa gagaccagga gggtttggtt agctcacagg 300
acttccccca cccagaaga tttagcatcc atactagact catactcaac tcaactagga 360
tcatactcaa ttgatggta tttagacaatt ccatttcttt ctggttatta taaacagaaa 420
atcttctc cctctcttcc cagtaaaagg ccttggtatc tttctgttgg aatgattctt 480
atgaacttgt ttatttttaa tgggtgggtt tttttctggt 520

```

&lt;210&gt; 389

&lt;211&gt; 365

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 389

```

cgttgcccc gtttgacaga aggaaggcg gagottatto aaagtctaga gggagtggag 60
gagtttaagg tggatttcag atctgcctgg ttccagccgc agtgtgccct ctgctcccc 120
aacgactttc caaataatct caccagcgcc ttccagctca ggcgtcctag aagcgtcttg 180
aagcctatgg ccagctgtct ttgtgttccc tctcaccgcg ctgtcctcac agctgagact 240
cccaggaaac cttcagacta ccttctctg ccttcagcaa ggggcgttgc ccacattctc 300
tgagggtcag lggaaagacc tagactccca ttgctagagg tagaaagggg aaggggtgctg 360
gqqaag
365

```

&lt;210&gt; 390

&lt;211&gt; 221

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; misc feature

&lt;222&gt; (1)...(221)

&lt;223&gt; n = A, T, C or G

&lt;400&gt; 390

```

tgctctcca tcoctggccc gaattctctg tcaggaaagt ggggatggac cccatctgca 60
tacacgntt ctcatgggtg tggaaacatct ctgcttgagg ttccaggaag gcoctctggct 120
gctctangg tctgancga ntggttgccc canttgaca naaggaaagg cggagcttat 180
tcaaaagtcta gaggagtgag aggagtlagg gctggatttc a 221

```

&lt;210&gt; 391

&lt;211&gt; 325

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)...(325)  
 <223> n = A,T,C or G

<400> 391  
 tggagcaggt cccgagggcct ccttagagcc tggggccgac tctgtgncga tgcangcttt 60  
 ctctcgccgc cagcctggag ctgctcctgg catctacca caalcagncg aggcgagcag 120  
 tagccagggc actgctgcca acagcccgtc cnnataccat catgtnaccc ggtgngctct 180  
 naanttngat ntccanagcc ctaccacatn tagttctgct ctcccaccgg ntaccagccc 240  
 caetgcccag gaatectaca gccagtcacc tglcccgcgc tctctaccta ccagtacgat 300  
 gaggacctcg gctactacta tgacc 325

<210> 392  
 <211> 277  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)...(277)  
 <223> n = A,T,C or G

<400> 392  
 atattgttta actccttccct ttatatcttt taacattttc atggngaaag gtccacatct 60  
 agtctcactt nggcagngn ctctactctg agtctcttcc ccggcctgnc ccagtngnaa 120  
 antaccanga accgncatgn cttaanacn ncctggtttn tgggttnntc aatgacctga 180  
 tgcagtgcac caccctgtcc actacgtgat gutgtaggat taaagtctca caqlgggcgg 240  
 ctgaggatac agcgccgcgt cctgtgttgc tggggaa 277

<210> 393  
 <211> 566  
 <212> DNA  
 <213> Homo sapiens

<400> 393  
 actagtcag tgtggtggaa ttgcggccg cgtcgacgga caggtcagct gtctggetca 60  
 gtgatctaca ttctgaagtt gtctgaaaat gtcttcatga tttaattcag cctaaacgtt 120  
 ttgccgggaa caetgcagag acaatgctgt gaggtttcaa ccttagccca tctgcqggca 180  
 gagaaggctct agtttgtcca tcagcattat catgatatac ggaactggta ctggttaaag 240  
 gaggggtcta ggagatctgt cctttttaga guacacttac ttatcatgaa glatttqga 300  
 ggggtggttt caaagtaga aatgtuctgt attccgala tcatctgla aacattttat 360  
 catctattaa tcatuactgc ctgtatctat tatttatctc atctctctac gctggaaact 420  
 ttctgcctua atglttactg tgcccttgtt ttctgctagll tglgttgttg aaaaaaaaaa 480  
 catctctctg ctgactttta atttttgcac aaagttattt taactctatc aattaaaagc 540  
 ttttgcctat caaaaaaaa aaaaaa 566

<210> 394  
 <211> 384  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)...(384)  
 <223> n = A,T,C or G

<400> 394  
 gaacatacat gtcccgccac ctgagctgca gtctgacatc atequcatec cgggcctcgc 60  
 tgcaaatng gaccgggcca aggetggact gctggcgct gtgaaggagc tacaggccna 120  
 gcaggaggac cgggccttaa ggagttttaa gctgaglgtc accttagacc ccaaalacca 180  
 tcccaagatt atcgggagaa aggggcgcgt atttaeccaa atccggttgg agcatgacgt 240

128

```

gaacatccag ttccctgata aggacgatgg gaaccagccc caggaccaaa ttcccatcac 300
agggtacgaa aagaacacag aagctgccag ggatgctata ctgagaattg tgggtgaact 360
tgagcagatg gtttctgagg acgt 384

```

```

<210> 395
<211> 399
<212> DNA
<213> Homo sapiens

```

```

<400> 395
ggcaaaactg tgtgacctca ataagacctc gcagatccaa ggtcaagtat cagaagtgc 60
tctgaccttg gactccaaga cctacatcaa cagcctggct atattagatg atgagccagt 120
tatcagaggt ttcatcattg cggaaattgt ggagtctaag gaaatcatgg cctctgaagt 180
attcaogtct ttccagtacc ctgagttctc tatagagttg cctaaccacag gcagaattgg 240
ccagctactt gtctgcaatt gtatcttcaa gaataacctg gccatccctt tgactgaagt 300
caagttctct ttggaaagcc tgggcattct ctcactacag acctctgacc atgggacggt 360
gcagcctggt gagaccatcc aatcccaat aaaatgcac 399

```

```

<210> 396
<211> 403
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (1)...(403)
<223> n = A,T,C or G

```

```

<400> 396
tggagttntc agtgcaasca agccataaag ctccagtagc aaattactgt ctacagaaa 60
gacattttca actctctgctc cagctgctga taanacaaat catgtgttta gcttgactcc 120
agacaaggac aacctgttcc ttcataactc tctagagaaa aaaaggagtt gttaytagat 180
actaaaaaaa gtggatgaat aatctggata tttttcctaa aagattcct tgaacacal 240
taggaasatg gagggcctta tgatcagaat gctagaatta gtccattgtg ctgaagcagg 300
gtttagggga gggagtggg gatanaagaa ggaaaaaaag aagaytgaga aaacctattl 360
atcaazgcag gtgctatcac tcaatcttag gacctgctct ttt 403

```

```

<210> 397
<211> 100
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (1)...(100)
<223> n = A,T,C or G

```

```

<400> 397
actagtnacg tgtggtggaa ttccgggccc cgtcgacctc naanccatcl ctatagcaaa 60
tccatcccog ctcttggttg gtnacagaat gactgacaaa 100

```

```

<210> 398
<211> 278
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (1)...(278)
<223> n = A,T,C or G

```

```

<400> 398

```

129

```

gogggccgct cgacagcagt tccgcccggc ctgcgccctg ggtgggggatg tgcgcaacgc 60
ccacctggac atctggaagt cagcggcctg gatgaaaggag cggacttcac ctggggcgat 120
tcactactgt gcctcgacca gtgaggaggc ctggaccgac agcgagggtg actcatcatg 180
ctccgggcag cccatccacc tgtggcagtc cctcagggag ttgctactca agcuccacag 240
ctatggccgc ttcattangt ggcaccaacc ggaagagg 278

```

<210> 399  
 <211> 298  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)...(298)  
 <223> n = A,T,C or G

```

<400> 399
acggaggtgg aggaagcgnc cctgggatcg anaggatggg tectgncatt gacmccctcn 60
gggggtgcng catggagcgc atgggcgggg gcctgggcca cggcatggat cgcgtgggct 120
ccagatcga gcgcattggc ctggtcatgg accgcatggg ctccgtggag cgcattgggt 180
ccggcattga gcgcattggc ccgctgggcc tgcaccacat ggccctccanc attganocga 240
tgggcccagac catggagcgc attggtctct ggtggagcn catgggtgcc ggcattggg 298

```

<210> 400  
 <211> 548  
 <212> DNA  
 <213> Homo sapiens

```

<400> 400
acatcaacta ctctctcatt ttaagggtatg gcagttccct tcctccctct ttcclgccll 60
gtacatgtac atgtatgaaa ttctctctct ttaccgaact ctctccacac atcacaagggt 120
caaagaacca cagcgttaga agggtaagag ggcacctat gaaatgaaat ggtgatttct 180
tgagtctctt ttttccactt ttaaggggccc atggcaggac ttagagttgc gagttaagac 240
tgcagagggc tagagaatta ttcatcacag gctttgaggg caccctatgtc acttatcccg 300
tataccctct caccatcccc ttgtctactc tgatgccccc aagatgcaac tgggcagcta 360
gtttggcccc taattctggg cctttgttgt ttgttttaat tacttgggca tccaggaag 420
ctttccagtg atctctaac atgggccccc ctccgtggat caagccctc ccaggccctg 480
tccccagccc ctctgcccc agccccccc cttgccttgg tgcacgccc tcccatggg 540
agcaggtt 548

```

<210> 401  
 <211> 355  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)...(355)  
 <223> n = A,T,C or G

```

<400> 401
actgtttcca tgttatgttt ctacacattg ctacctcagt gctcctggaa acttagcttt 60
tgatgtctcc aagtagtcca ccttcattta actctttgaa actgtatcat ctttgccaag 120
taagagtggg ggcctatttc agctgctttg acaaaatgac tggctcctga cttaacgttc 180
tataaatgaa tgtgctgaag caaagtgcgc atgggtggcg cgaagaagan aaagatgtgt 240
tttgttttgg actctctgtg gtcccttcca atgctgnngg tttccaacca ggggaagggt 300
cccttttgc a ttgccaagt ccataacct gaggactact ctaccatggg tctgc 355

```

<210> 402  
 <211> 407  
 <212> DNA  
 <213> Homo sapiens

130

<220>  
 <221> misc\_feature  
 <222> (1)...(407)  
 <223> n = A,T,C or G

<400> 402  
 atggggcagg ctggataaag aaccaagarc cactggagla tgcgtgtcttc aagaaaccca 60  
 tctcacatgc ggtggcatat atagggtcaa aataaaggaa tggagaaaaa tatttcaagc 120  
 aatggaaaaa cagaaaaaag cagggtgttg actcctactt tctgacaaaa cagactatgc 160  
 gaataaagat aaaaaagaga aggcacattac aaagggtggtc ctgacctttg ataaatctca 240  
 ttgcttggta ccaacctggg ctgttttaat tgcacaaacc aaaaaggataa ttgctgagg 300  
 ttgtggagct tctccctgc agagagtcct tgatctcca aaatttggtt gagatgttag 360  
 gntgattttg ctgacaactc cttttctgaa gttttactca tttcaa 407

<210> 403  
 <211> 303  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)...(303)  
 <223> n = A,T,C or G

<400> 403  
 cagtatttat agccnaactg aaaaactagt agcaggcaag tctcaaatcc aggcacccaa 60  
 tctaagcaa gaggcatggc atggtgaaaa tgcacaaagg gaglctggcc aatctacaa 120  
 tagagaccaa gacctactca gtcatgaaca aaaaggcaga caccacatg gatctcatgg 180  
 gggatgggat attgtaatta tagagcagga agatgcacgt gatcglaatt tggcacaca 240  
 tcttaacaaac gaccgaaacc cattatttac ataaacctcc attcggtaac catgttgaaa 300  
 gga 303

<210> 404  
 <211> 225  
 <212> DNA  
 <213> Homo sapiens

<400> 404  
 aagtgttaact tttaaaaatt tagtgggttt tgaattctct tagaggaaag taagggaaga 60  
 attgtlaatg cactcattta ccttlacatg gtgaaagltc tctcttgatc ctacaaacag 120  
 acattttcca ctggtglltc ctaggttgtt aagtgtatca gclgtgttgg gcatgtgaat 180  
 ctcccaagtc clgtgttaata aataaaglat ctttatttca ttcct 225

<210> 405  
 <211> 334  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)...(334)  
 <223> n = A,T,C or G

<400> 405  
 gagctgttat actgtgagtt ctactaggaa atcatcaaat ctgagggttg tctggaggac 60  
 ttcaatacac ctcccccac agtgaatcag ctccagggg gtccagtcac tctccttact 120  
 tcatcccat cccatgcaaa aggaagaccc tccctccttg gctcacagcc ttctctaggc 180  
 ttccagtgct ctccaggaca gagtgggtta tgttttcagc tccatccttg ctgtgagtg 240  
 ctggtgcggt tctgcctcca gctctgtctc agtgcctcat ggacagtgtc cagcccatgt 300  
 cactctccac tctctcannq tggatcccac cccct 334



131

<210> 406  
 <211> 216  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)...(216)  
 <223> n = A,T,C or G

<400> 406  
 ttctacacct aatgaggagg ttganatnac atnnaaccag gaaatgcctg gatctcaang 60  
 gaaacsaaca cccaataaac tcggagtggc agactgacaa ctgtgagaca tgcacttget 120  
 acnaaacaca aatttnatgt tgcacccttg tttctacacc tgtgggttat gacaaagaca 180  
 actgccaaag aatnttcaag aaggaggact gccant 216

<210> 407  
 <211> 413  
 <212> DNA  
 <213> Homo sapiens

<400> 407  
 gctgacttgc tagtatcato tgcattcatt gaagcacaag aacttcatgc cttgactcat 60  
 gtaaatgcaa taggattaaa aaataaattt gatataccat ggaacacagc aaaaaatatt 120  
 gtacacacatt gacccagtg tcagattcta caactggcca ctacaggagc aagagttaat 180  
 cccagaggtc tatgtcctaa tgtgtttatg caaatggatg tcatgcaagt accttcattt 240  
 ggaaatagt catttgtcc tgtgacaglt gatacttatt cacatttcac atgggcaacc 300  
 tgcacagacg gagaagagct loccatgtta aaagacallt attatcttct ttctctgtca 360  
 tgggagttcc agaaaaagt ccaacacagc aaggggcagg ttctgtagta aag 413

<210> 408  
 <211> 183  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)...(183)  
 <223> n = A,T,C or G

<400> 408  
 ggaagctngcc ctcaattcc. ccatntctat gttancalal ttaatgtell ttgnnattoo 60  
 tncfreaeta gtaatectt aaagggtan ntastctta actagtcnct ccatlgtgag 120  
 cattatectt ccagtattcn ccttctnttt tatttactcc ttcttggcta ccatgtact 180  
 ntt 183

<210> 409  
 <211> 250  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)...(250)  
 <223> n = A,T,C or G

<400> 409  
 cccagcctg ataagutctt latllctgta agtccctcta ggaatcctc aaatctgacg 60  
 gtggtttggg ggaacctgac aacctccctg taatt atca gclltoagtt tctccccccta 120  
 gtccctcctt caacacata ggaggalct cccctcllil ctgctcacag ccttatctag 180  
 gcltcccagl gcccacagga cagcgtgggc tatgtttaca ggccttcctt gctggggggg 240  
 ggccttatgc 250

<210> 410  
 <211> 306  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)...(306)  
 <223> n = A,T,C or G

```
<400> 410
ggctgggtttg caagaatgaa atgaatgatt ctacagctag gacttaacct tgaastggaa 60
agtcttgcaa tcccatittgc aggatccgtc tgtgcacatg cctctgtaga gagcagcatt 120
cccagggacc ttggaaacag ttggcactgt aaggtgcttg ctccccaga cacatcctaa 180
aaggtgttgt aatggtgaaa accgcttcc tctttattgc ccttcttae ttatgtgaac 240
naatgggttg ctttttttgn atcttttta aactggaaag ttcaattgng aaatgaata 300
tontgc                                     306
```

<210> 411  
 <211> 261  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)...(261)  
 <223> n = A,T,C or G

```
<400> 411
agagatattt cttaggtnaa agttcataga gtcccatga actatatgac tggccacaca 60
ggatcttttg tatttaagga ttctgagatt ttgcttgagc aggatagat aaggtgttc 120
tttaaatgtc tgaastggaa cagatttcaa aaaaaaacc cacaatctag ggtgggaaca 180
aggaaggaaa gatgtgaata ggctgatggg caaaaaacca atttaccat cagttccayc 240
ctctctcaa gngaggcaa a                                     261
```

<210> 412  
 <211> 241  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)...(241)  
 <223> n = A,T,C or G

```
<400> 412
gttcaatgtt acctgacatt totacaacac ccactcacc gatgtattcg ttgccagtg 60
ggaacatacc agcctgaatt tggaaaaaat aattgtgttt cttgccagg aaatactacg 120
actgactttg atggctccac aaacataacc cagtgtaaaa acagaagatg tggaggggag 180
ctgggagatt tcactgggta cattgaattc ccaactacc cengcaatta ccagccaac 240
a                                     241
```

<210> 413  
 <211> 231  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)...(231)  
 <223> n = A,T,C or G

133

```

<400> 413
aacctcttaca atccaagtga ctcatctgtg tgcttgaate ctttccactg tctcctctcc 60
ctcatccaaag tttctagtag ctctctcttg ttgtgaagga taatccaacl gaacacccaa 120
aagtttactc tctctatttg gaacctaaaa actctcttct tcttggtctc gagggtcca 180
agaatccttg aatcatttct cagatcattg gggacaccan atcagggaac t 231

```

```

<210> 414
<211> 234
<212> DNA
<213> Homo sapiens

```

```

<400> 414
actgtccatg aagcactgag cagaaqctgg aggcacaaag caccagacac tcacagcaag 60
gatggagctg aaaacataac ccactctgtc ctggaggcac tgggaagcct agagaaggct 120
gtgagccaaag gagggaaggt ctctctcttg catgggatgg ggatgaagta aggagagggg 180
ctggaccccc tggaaqctga ttactatagg ggggaaggtg attgaagtcc tcca 234

```

```

<210> 415
<211> 217
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (1)...(217)
<223> n = A,T,C or G

```

```

<400> 415
gcaaggaggt aagactgagt atcttttcta cattctttta actttctaaq gggcacttct 60
caaaacacag accaggtagc aaatctccac tgctctaagg ntctcaccac cactttctca 120
cacctagcaa tagtagaatt cagtctact tctgaggcca gaagaatggt tcagaaaaat 180
antggattat aaaaaataac aattaagaaa aataatc 217

```

```

<210> 416
<211> 213
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (1)...(213)
<223> n = A,T,C or G

```

```

<400> 416
atgcataatn aaagganact gctctgcttt tagaagacat ctggactgct ctctgcatga 60
ggcacagcag taaagctctt tgattcccag aatcaagaac tctcccttcc agactattac 120
cgaatgcaag gtggttaatt gaaggccact aattgatgct caaatagaag gatattgact 180
atattggaac agatggagtc tctactacaa aag 213

```

```

<210> 417
<211> 303
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (1)...(303)
<223> n = A,T,C or G

```

```

<400> 417
nagtcctcag gcccatcagg gaagttcaca ctggagagaa gtcatacata tgtactgtat 60

```

134

```

gtgggaaggg ctttactctg agttcaaate ttcaagccca tcagagagtc cacactggag 120
agaagccata caaatgcaat gagtgtggga agagcttcag gagggatcc cattatcaag 180
ttcatctagt ggteccacaca ggagaqaasac cctataaatg tgagatatgt gggaggggct 240
tcantcaaaag ttctgtatctt caaatccatc nqaagggncca cagtatanen aaacctttta 300
agt

```

```

<210> 418
<211> 328
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (1)...(328)
<223> n = A,T,C or G

```

```

<400> 418
tttttggcgg tgggtggggca gggacgggac angagtctca ctctgttgcc caggetggag 60
tgcacaggca tgatctcggc tcaactacaac cctgctccac catgtccaag cgattcttgt 120
gectcagcct tccctgtagc tagaattaca ggcacatgcc accacaccca gctagttttt 180
gtatttttag tagagacagg gtttcacccat gttggccagg ctggtctcaa actcctnacc 240
tcagnggtca ggctggcttc aaactcctga cctcaagtga tctgcccacc tcagcctccc 300
aaagtgtctan gattacaggc cgtgagcc

```

```

<210> 419
<211> 389
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (1)...(389)
<223> n = A,T,C or G

```

```

<400> 419
cctcctcaag acggcctgtg gtcgcctcc cggcaaccaa gaagcctgca gtgccatag 60
acccctgagc catggactgg agcctgaaag gcagcgtaca ccttgcctct gatcttgtg 120
cttgtttcct ctctgtggct ccattcatag cacagtgtgt gcactgagge ttgtgcagge 180
cgagcaggcc caagctggct caaagagcaa ccagtcact ctgucacggg gtgccaggca 240
ccggttctcc agccacccac ctcactcgct cccqcaaatg gcacatcagt tctctaccc 300
taaaggtagg accaaagggc atctgctttt ctgaagtccl ctgctctatc agccatcacg 360
tggcagccac tgggctgtg tggcagcg

```

```

<210> 420
<211> 408
<212> DNA
<213> Homo sapiens

```

```

<400> 420
gttccctcta actcctgcca gaaacagctc tccctcaacat gagagctgca cccctcctcc 60
tggccagggc agcaagcctt agccttggct tcttgtttct gcttttttcc tggctagacc 120
gaagtgtact agccaaggag ttgaagtttg tgactttggg gtttcggcat ggagaccgaa 180
gtcccatiga cacttttccc actgaaccca taaagggaat ctcatggcca caaggatttg 240
gccaaactcac ccagctgggc atggagcagc attatgaact tggagagtat ataagaaaga 300
gatatagaaa attcttgaat gagtccfata aacatgaaca ggttttatatt cgaagcacag 360
acgttgaccg gaatttgatg aagtgtctatg acnaacctgg caagcccg 408

```

```

<210> 421
<211> 352
<212> DNA
<213> Homo sapiens

```

<220>  
 <221> misc\_feature  
 <222> (1)...(352)  
 <223> n = A,T,C or G

<400> 421  
 gctcøøøaat ctttttactg atnggcattg ctacacaatc attgactatt acggaggcca 60  
 gaggagaatg øggcctggcc tgggagccct gtgcctacta naagcacatt agattatcca 120  
 ttcactgaca gaacaggctt tttttgggtc cttcttctcc accacnatac acttgcagtc 180  
 ctccctcttg aagattcttt ggcagtgctc tttgtcataa cccacagggtg tagaacaag 240  
 ggtgcaacat gaaatttctg ttctgtagca agtgcattgc tcacaagttg gcangtctgc 300  
 cactccaggt ttattgggtg tttgtttcct ttgagatcca tgcatttctt gg 352

<210> 422  
 <211> 337  
 <212> DNA  
 <213> Homo sapiens

<400> 422  
 atgccaccat gctggcaatg cagcggggcg tcgaaggcct gcattatccag cccaagctgg 60  
 cgatgatcga cggcaaccgt tggccgaagt tggcgatgcc agcugaagcg gtggtcaagg 120  
 gcgatagcaa ggtgcggcg atcggcgcg cgtcøatcct ggccaaggctc agccgtgac 180  
 gtgaaatggc agctgtcgaa ttgatctacc cgggtttatg catcgggcg cøtaagggt 240  
 atccgacacc ggtgcacctg gaagccttg øcgggctgg gccgøcgcc attcøccgac 300  
 gøttcttcg cøggtøcggc lggcctatga øøattat 337

<210> 423  
 <211> 310  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> {1}...{310}  
 <223> n = A,T,C or G

<400> 423  
 gctcøøøaat ctttttactg atatggcatg cctacacaat cøttgactat tagaggccag 60  
 aggagaatg ggcctggcct gggøgcccct tgcctactan øagcncøta gattatccat 120  
 tcactgacag øøcøggLctt ttttgggtcc ttcttctcøa cøcøgatata cttgcagtc 180  
 tcttcttg øgattctttg gcagttgtct ttgtcøtaac cøcøagggtg ønaaacaagg 240  
 gtgcøøcøtg øøatttctgt ttctgtagca gtgcattgtc cacagttgtc øagtctgccc 300  
 tccgagttta 310

<210> 424  
 <211> 370  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)...(370)  
 <223> n = A,T,C or G

<400> 424  
 gctcøøøaat ctttttactg atagggatgg ctacacaatc attgactatt agøggccøga 60  
 ggagaatgag gøctggcctg ggaøccctgt gøctactaga øgcacattø attalccøtl 120  
 cactgacaga øcaggtøllt tttgggtcct tøttctccac cøcøgatatø tkgcagtcct 180  
 cøttcttgøa gattctttgg cøgllgLctt tgtcølaøø cøcøgggtgø gøøacatcct 240  
 ggttgaatct cøtggaactc cctcattagg Latgaaøøag cøtgøatgcat tgcøtøøøgt 300  
 cøcøøgggtg gøøøagatca cøacgtgccc cøggøøøøa ttcattgtg øagcaggar 360  
 tccgtcøagc 370

136

<210> 425  
 <211> 216  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)...(216)  
 <223> n = A,T,C or G

<400> 425  
 aattgctatn ntttattttg ccactcaaaa taattacca aaaaaaaaaa tnttaaata 60  
 taacaacnca acatcaaggn aaananaaca ggaatggntg actntgcata aatnggcoga 120  
 anattatcca ttatnttaag ggttgacttc aggntacaga acacagacaa acatgcccag 180  
 gaggntntca ggaccgctcc atgtntttntg aqgagg 216

<210> 426  
 <211> 596  
 <212> DNA  
 <213> Homo sapiens

<400> 426  
 ctccagtgga ggataaccct gttgccccgg gccgaggctc tccattagge Lclgattgat 60  
 tggcagtcag tgatggaagg gtgtttctgat cttccgact gcccacaggg tgcctggcca 120  
 gctctctgtt ttgctgagtt ggcagtagga cctaatttgt taattaagag tagatggtga 180  
 gctgtccttg tattttgatt aacctaatgg ccttcccagc acgactcga ttcagctgga 240  
 gacatcacgg caacttttaa tgaaatgatt tgaaggggca ttcccgta 300  
 ttaggcagtt catctgcact gataaactct tggcagctga gctggtcga gctgtggccc 360  
 aaacgcacac ttggtttttg gttttgagat acaactctta atcttttagt catgcttgag 420  
 ggtggaatgg cttttcagct ttanccccat ttgcactgcc ttggaagtgt agccaggaga 480  
 atacactcat atactcgtgg gctcagaggg cacagcaqat gtcattggte tactgootga 540  
 gtcccgctgg Lennatccca ggaccltcca tccgcgagta cctgggagcc cgtgct 596

<210> 427  
 <211> 107  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)...(107)  
 <223> n = A,T,C or G

<400> 427  
 gaagaattca agttaggttt attcaaaggg cttacngaga atccctanacc caggncocag 60  
 cccgggaqca gecttanaga gctcctgttt gautgcccgg ctcagng 107

<210> 428  
 <211> 38  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)...(38)  
 <223> n = A,T,C or G

<400> 428  
 gaacttcnna anaangactt tattcactat ttacatt

38

<210> 429

137

<211> 544  
 <212> DNA  
 <213> Homo sapiens

<400> 429  
 ctttgctgga cgggaataaaa gtggacgcaa gcatgaccto ctgaltgagg cgtgcbttt 60  
 attgaagagc ggctgcagcc ctgagggttc gattaanaac cgggattgt alagacgccg 120  
 atatccacga actcttgaag gactttctga tttatccaca atcaaatcat cggtttccag 180  
 tttgcatggt ggctcatcac ctgtagaacc tgaattggcc gtggctggaa tccactcgtt 240  
 gcttccact tcagttacac ctactcacc atccctccct gttgggtctg tctgtcttca 300  
 agatactaag cccacatttg agatgcagca gccatctccc ccaattccct ctgtccatcc 360  
 tgatgtgcag ttaaaaaaac tgcclltta tgatglectt gatgttctca tcaagccac 420  
 gaggtttagt caaagcagta ttcagcatt tcaaggagaag ttttttattt ttgctttgac 480  
 acctcaacaa gttagagaga talgcclatc cagggatitt ttgccagggt gtaggagaga 540  
 ttat 544

<210> 430  
 <211> 507  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)...(507)  
 <223> n = A,T,C or G

<400> 430  
 cttatcncaa tggggctccc aaacttggct gtgcagtga aautccgggg gaattttgaa 60  
 gaacactgac acccatcttc caccocgaca ctctgattta altgggctgc aglgagaaca 120  
 gageatcaat ttataaagct gccagagtg tntctctgg cagcgttgtg atctttgccn 180  
 ccttctgac tttatgcaat gcatcatgct attcatacc taatgaggga gttccaggag 240  
 attcaaccag gatglllcta cncctgtggg ttatgacaaa gacaactgcc aaagaatntt 300  
 caagagggag gactgcaggt atatcgtggt ggagaagaag gacccaaaaa agacctgttc 360  
 tctcagtgaa tggataatct aatgtgcttc tagtaggcac agggctccca ggccaggoot 420  
 cattctcttc tggcctctaa tagtcaatga ttgtgtagcc atgcctatca gtaaaaagat 480  
 (tttgagcaa aaaaaaaaaa aaaaaaa 507

<210> 431  
 <211> 392  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)...(392)  
 <223> n = A,T,C or G

<400> 431  
 gaaaattcag aatggatgaa aacaaatgaa gtacaaaata tttcagattt acatagcgat 60  
 aaaaagagaa gcaatttcca ggaggactta caaatggaag tacactctan aacctatc 120  
 tatcatggct aaatgtgaga ttagcacagc tgtattattt gtacattgca aacacctaga 180  
 aagagatggg aaaaaaatc ccaggagttt tgtgtgtgga gtccctgggt ttccaacaga 240  
 catcaltcra gcatctcag attagggnga ttggggatca ttctggagtt ggaatgttca 300  
 acaaaagtga tgttgttagg taaaatgtac aacttctgga tctatgcaga cattgaaggt 360  
 gcaatgagtc tggcttttac tctgctgttt ct 392

<210> 432  
 <211> 387  
 <212> DNA  
 <213> Homo sapiens

<220>

138

<221> misc\_feature  
 <222> (1)...(387)  
 <223> n = A,T,C or G

<400> 432  
 ggtatccta cataatcaaa tatagctgta gtacatgttt tcattggngt agattaccac 60  
 aatgcnaagg caacatgtgt agatctcttg tottattctt ttgtctataa tactgtattg 120  
 ngtagtccaa gctctcggna gtccagccac tngaaacat gctcccttta gattaaacct 180  
 gtggacnctn ttgttgnaatt gtctgaactg tagngccctg tattttgctt ctgtctgnga 240  
 attctgttgc ttctggggca tttccttgng atgcagagga ccaccacaca gatgacagca 300  
 atctgaattg ntccaatcac agctgogatt aagacatact gaaatcgtac aggaccggga 360  
 acaacgtata gaacactgga gtccctt 387

<210> 433  
 <211> 281  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)...(281)  
 <223> n = A,T,C or G

<400> 433  
 ttcaacblagc anagaanaact gcttcagggg gtgtaaaatg aaaggcttcc acgcagttat 60  
 ctgattcaag aacactaaga gagggacaag gctagaagcc gcaggatgc tactctatag 120  
 caggncctat ttgggttggc tggaggagct gtggaaaaca tggagagatt ggcgctggag 180  
 atcgccgtgg ctattcctcn ttgntattac accagngagg ntctctgtnt gccactggt 240  
 tnnaaaaccg ntatacaata atgatagaat aggacacaca t 281

<210> 434  
 <211> 484  
 <212> DNA  
 <213> Homo sapiens

<400> 434  
 ttttaaaatc agcatttagt gctcagtcce tactgagtag tctttctctc cctcctctcg 60  
 aatcctaattc tttcaacttg caatttgcaa ggattacaca tttaactgtg atgtatattg 120  
 lgttcgcaaa aaaaaaaagt gtctttgttt aaaattactt ggtttgtgaa tccatcttgc 180  
 tttttcccc ttggaactag tcattaaccc atctctgaac tggtagaaa acatctgaag 240  
 agctagtcta tcagcatctg acaggtgaat tggatggttc tcagaaccat ttcacccaga 300  
 cagcctgttt ctatcctgtt taataaatta gtttgggttc tctacatgca taacaaaccc 360  
 tgcaccaate tgtcacataa aagtctgtga cttgaagttt agtcagcacc cccaccaaac 420  
 tttatttttc tatgtgtttt ttgcaacata tgagtgtttt gaaaataaag taccatgtc 480  
 tttt 484

<210> 435  
 <211> 424  
 <212> DNA  
 <213> Homo sapiens

<400> 435  
 ggcgcgctca gagcaggtna ctttctgect tccacgtcct ccttcaagga agccccatgt 60  
 ggttagcttt caatatcgca ggttcttact cctctgcctc tataagctca aaccaccaa 120  
 cgatcgggca agtaaacccc ctccctcgcc gacttcggaa ctggcgagag ttcagcgag 180  
 atgggcctgl ggggaggggg caagatagat gagggggagc ggcattggtc ggggtgaccc 240  
 cttggagaga ggaaaaaggg cacaagaggg gctgccaccg ccactaacgg agatggccct 300  
 ggtagagacc tttgggggtc tggaaacctc ggactcccca tgccttaact ccacactct 360  
 gctatcagaa acttaaacctt gaggattttc tctgttttcc actcgcaata aattcagagc 420  
 aacc 424

<210> 436



<211> 667  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)...(667)  
 <223> n = A,T,C or G

```
<400> 436
accttgggaa nactctcaca atataaaggg tcttagactt tactccaat tccaaaaagg 60
tcctggccat gtaatcctga aagttttccc aaggtagcta taaaatcctt atagggtctc 120
agcctctctt ggaattcctc tgatttcaaa gtctcactct caagttcttg aaaaaggagg 180
cagttcctga aaggcaggta tagcaactga tcttcagaaa gaggaactgt gtgcacaggg 240
atgggctgcc agagttagat aggtatccag atgtcgacac ctcttggggg aaacagggct 300
gccaggtttg tcatagcact catcauagtc cagtcacagt ctgtccttcg aalataaacc 360
tgttcctgtt tataggactc attcaagaat lltctatata tctttcttat atactctcnc 420
agttcataat gctgtcccat gccagctggg gtyagttggc caaatccttg tggccatgag 480
gattccttta tggggtcagt gggaaaagtg lcaatgggac ttgggtctcc atgccgaacc 540
accaagtcga caaucttcaa ctcttggtct agtacctc ccgtctagcca gaasaaaagc 600
agaaacanga agccaaggcl aaggcltgc tccctgccag gagggagggt gcagctctca 660
tgttgag 667
```

<210> 437  
 <211> 693  
 <212> DNA  
 <213> Homo sapiens

```
<400> 437
ctacgtctca accctcatrt ttaggtaagg aatcttaagt ccaagatat taagtgaact 60
acacagccag gtaaggaaag ctggtttggc acataggac tctaccatac cgggttttgt 120
taaagctcag gttaggaggc tgataagctt ggaagggaat tcagacagct ttttcagatc 180
ataaaagata attcttagcc catgttcttc lccagagcag acctgaactg acagcacagc 240
aggtactcct ctattttcac cctcttggct tctactclcl ggcagtcaga cctgtgggag 300
gccatgggag aaagcagctc tctggatglt tgtacagatc atggactatt ctctgtggac 360
cattctcuaa ggttaacctc ggtgtcactc ttggggggac agccagcatt tttagcttcc 420
atttgagltt ctgtctgtct tcagtagagg aaacttttgc tcttcacact tcacatctga 480
acaccleact gctgttgctc ctgaggtggg gaaagacaga tatagagctt acagtattta 540
tactatttct aggcactgag ggctgtgggg taccttgtgg tgccaaaaca gatcctgttt 600
taaggacatg ttgcttcaga gatgtotgta actatctggg ggctctgttg gctctttacc 660
ctgcacatg tgctctcttg gctgaaaatg acc 693
```

<210> 438  
 <211> 360  
 <212> DNA  
 <213> Homo sapiens

```
<400> 438
ctgcttatca caatgaatgt tctcttgggc agcgttctga tcttggccac ctctgtgact 60
ttatgcaatg catcatgcta ttccatcccl aatgggggag ttccaggaga ttcaaccagg 120
atgtctctac acctgtgggt tatgacaaag acaactgcca aagaatcttc aagaaggagg 180
actgcaagta tatctggtgg agagagagga cccaaaaaag acctgttctg tcagtgaatg 240
gataatctaa tgtgcttclg gtaggcacag ggcctccagg ccaggcctca ttctcctctg 300
gcctctaata qtcaataatt qcttagccat ggcctatcagt aaaaagattt ttgagcaaac 360
```

<210> 439  
 <211> 431  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature

140

&lt;222&gt; (1)...(431)

&lt;223&gt; n = A, T, C or G

&lt;400&gt; 439

```

gttccctnnta actcctgcca gaaacagctc tcttcaacat gagagctgca cccctcctcc 60
tggccagggc agcaagcctt agccttggct tcttgtttct gctttttttc tggctagacc 120
gaagtgtact agccaaggag ttgaagtttg tgacttttgg gtctcggcat ggagaccgaa 180
gtcccatatga cacttttccc actgacccca taaggaatc ctcatggcca caaggatttg 240
gccaaetcac ccagctgggc atggagcagc attatgaact tggagagtat ataagaaaga 300
gatatagaaa attcttgaat ggttcctata aacatgaaca ggtttatatt cgaagcacag 360
acgttgaccg gactttgatg agtgctatga caaacctggc agcccgctga cgcggccgcg 420
aatttagtag t                                     431

```

&lt;210&gt; 440

&lt;211&gt; 523

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 440

```

agagataaag cttaggtcaa agttcctaga gttcccatga actatctgac tggccacaca 60
ggatcttttg tatttaagga ttctgaagat ttgcttgagc aggtatcgat aaggctgttc 120
tttaaatgtc tgaatatgaa cagatttcaa aaaaaaaccc caccatctag ggtgggaaca 180
uggaaggaaa gatgtgaaia ggcctgctgg caaaaaacca atttaccat cagttccagc 240
cttctctcaa ggcggggcaa agaaaggaga taccgtggag acatctggaa agttttctcc 300
actggaaaaa tgcctctctc tgtttttata tttctgttaa aatatatgag gctacagaac 360
laaaaaatca aacctctttg tgtcctttgg tcttggaaaca tttatgttcc ttttaagaa 420
acaaaaatca aactttacag aaagatttga tgtatgtaac acatatagca gctcttgaag 480
tatatatatc atagcaataa agtcatctga tgagaacaag cta                                     523

```

&lt;210&gt; 441

&lt;211&gt; 430

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 441

```

gttccctccta actcctgcca gaaacagctc tcttcaacat gagagctgca cccctcctcc 60
tggccagggc agcaagcctt agccttggct tcttgtttct gctttttttc tggctagacc 120
gaagtgtact agccaaggag ttgaagtttg tgacttttgg gtctcggcat ggagaccgaa 180
gtcccatatga cacttttccc actgacccca taaggaatc ctcatggcca caaggatttg 240
gccaaetcac ccagctgggc atggagcagc attatgaact tggagagtat ataagaaaga 300
gatatagaaa attcttgaat ggttcctata aacatgaaca ggtttatatt cgaagcacag 360
acgttgaccg gactttgatg agtgctatga caaacctggc agcccgctga cgcggccgcg 420
aatttagtag t                                     430

```

&lt;210&gt; 442

&lt;211&gt; 362

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 442

```

ctaagggaatt agtagtgttc ccatcacttg ttggagtgct gclattctaa aagattttga 60
tttccctggaa tgacaattat attttaactt tgggtgggga aagggttata ggaccacagt 120
cttcaattct gatacttgta aattaatctt ttatctgact tgttttggcc attaagctat 180
atgttttagaa atggctcatt tccggaaaaa ttgagaaeat tctgataata gtgcagaata 240
aatgaattaa tgttttactt aatttatall gaactgtcaa tgacaaataa saattctttt 300
tgattatttt ttgttttcat ttaccagaat aaaaactaag aattaaaagt ttgattacag 360
tc                                     362

```

&lt;210&gt; 443

&lt;211&gt; 624

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

141

<220>  
 <221> misc\_feature  
 <222> (1)...(624)  
 <223> n = A,T,C or G

<400> 443  
 tttttttttt gcaacacaaat atacatcaca gtgaaatgtg taatccttgc aaattgcaag 60  
 ttgaaagaat taaattcaga ggaggggaga gaaagagtac tcagtaggga ctgagcacta 120  
 aatgcttatt ttaaaagaaa tgtaaagagc agaaagcaat tcaggctacc ctgccttttg 180  
 tgcctggctag tactccggtc ggtgtcagca gcacgtggca ttgaacattg caatgtggag 240  
 cccaaaccac agaaatggg gtgaaatttg ccaactttct attaacttgg cttectgttt 300  
 tatataatat tgtgaatnat atcaacctact tcaaagggca gttatgaggc ttaaatgaac 360  
 taacgcctac aaaaacacta aacatagata acataggtag aagtactatg tatctggtac 420  
 atggtaaaaca tccttattat taaagtcaac gctaaaatga atgtgtgtgc atatgctaact 480  
 agtacagaga gagggcactt aaaccaacta agggcctgga ggggaaggtt cctggaaaga 540  
 ngatgcttct gctgggtcca aatcttggc tactatgacc ttggccaat tatttaaaact 600  
 ttgacctat ctgctaaca gata 624

<210> 444  
 <211> 425  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)...(425)  
 <223> n = A,T,C or G

<400> 444  
 gcacatcatt nntcttgcct tctttgagaa taagaagatc agtaaatagt tcagaagtgc 60  
 gaagctttgt ccaggccctg gtgtgaacc aatgttttgc ttagaatatg aacaagtaag 120  
 ttctttgcta tagcataaca caaaatttgc ataagtgttg gtccgcaaat ccttgaatgc 180  
 tgcttaaatgt gagagggttg taaaatcccl tgtgcaacac tctaactccc tgaatgtttt 240  
 gctgtgctgg gacctgtgca tgccagacaa ggcacagctg gctgaaagag caaccagcca 300  
 cctctgcaat ctgccacctc ctgctggcag gatl.tgtttt tgccclcccl gaagagccaa 360  
 ggaggcacca gggcataagt gagtacactt atggtccagc cggccgcgaa tttagtagta 420  
 gtaga 425

<210> 445  
 <211> 414  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (1)...(414)  
 <223> n = A,T,C or G

<400> 445  
 catgtttatg nttttggalt actttggqca cctagtgttt ctuaatcgte tatcatttct 60  
 ttctgttttt caaaagcaga galggccaga gtlcacaaca actgtatctt caagtctttg 120  
 tgaatttctt tgcattgtgc agaltatttg atgtagtttc ctttaactag catataactc 180  
 tgggtgtgtt cagataaatg aacagcaaaa tgttgttgga ttaccatttg gaacattgtg 240  
 aatgaaaaat tgtgtctcta gatlatglaa caaataacta tttcctaacc attgatcttt 300  
 ggatttttat aatcctactc ecaaatgaat aggcctctcc tcttgtattt tgaagcagtg 360  
 tgggtgctgg attgataaaa aaaaaaaagc tggcgcgcgc cgggaattta gtag 414

<210> 446  
 <211> 631  
 <212> DNA  
 <213> Homo sapiens

142

<220>  
 <221> misc\_feature  
 <222> {1}...{631}  
 <223> n = A,T,C or G

<400> 446  
 acaaatagga anaaagtgc agagaacacc acataaccttg tccggaacat tacaatggct 60  
 totgcattgca tgggaagtgt gaggattcta tcaatatgca ggagccatct tgcagggtgtg 120  
 atgctgggtta tactggacaa cactgtgaaa aaaaggacta cagtgttcta tacgttgttc 180  
 cuggtcctgt acgatttcag tatgtcttaa tccagctgt gattggaaac attcagattg 240  
 ctgtcatctg tgtggtggtc ctctgcataa caagggccaa actttaagta atagcattgg 300  
 actgagattt gtaaaccttc caaccttcca ggaattgccc cagaagcaac aqaattcaca 360  
 gacagaagca aaotacaggc cactacagtt cagacaatac aacaagagcg tccacgagggt 420  
 taattctaaa ggagcatgtt tccagtggtc lggactcccg agagcttggc clacacataa 480  
 cagttattata gacaaaagaa caagcaagaa gatctacaca lgttgcttg cttttgttgt 540  
 aatclacacc aakgaaaca tgtactacag ctatatattga ttctgtatgg atatatattga 600  
 aatagtatac attgltcttg tgtttttct g 631

<210> 447  
 <211> 585  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> {1}...{585}  
 <223> n = A,T,C or G

<400> 447  
 ccttgggaaa antntacaa ctataagggt cgtagacttt actccaaatt ccaaaaaggt 60  
 cctggccatg taalccctgaa agttttccca aggtagctat aaatccctta taagggtgca 120  
 ccclcttctg gaattcctct gatttcaaag tctcactctc aagtctctga aaacgagggc 180  
 agttccctgaa aggcagggtat agcaactgat ctccagaaag aggaactgtg tgcaccggga 240  
 tgggctgcca gagtaggata ggattccaga tgcctgacac ttctggggga aacagggctg 300  
 ccaggtttgt catagcactc atcaaaagtc ggtcaacgtc tgtgcttcga atataaacct 360  
 gttcatgttt ataggactca ttcaagaatt ttctatatct ctttcttata tactctocaa 420  
 gttcataatg ctgtccatg cccagctggg tgagttggcc aaatccttgt ggccatgagg 480  
 attcctttat cgggtcagtg ggaaagggtt caatgggact tcggtctcca tgcogaaaca 540  
 ccaaagtcac aaacttcaac tccttggcta gtacacttg gtcta 585

<210> 448  
 <211> 93  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> {1}...{93}  
 <223> n = A,T,C or G

<400> 448  
 tgcctgtggg tcattctgan nncogaactg acctgtccag ccctgcccga gggconccat 60  
 ggctccctag tgcctgtggg agganggggc tag 93

<210> 449  
 <211> 706  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature

143

&lt;222&gt; (1)...(706)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 449

```

ccaagttcat gctntgtgct ggacgctgga caggggggcaa aagcnmttgc tctgtgggtca 60
ttctgancac cgaactgacc atgccagccc tgcgatggt cctccatggc tccctagtgc 120
cctggagagg aggtgtctag tcagagagta gtctgggag gtggcctctg ngaggagcca 180
cggggacagc atcctgcaga tggtcyggcg cgtcccatlc gcuattcagg ctgctgcaact 240
gttgggaggg gcgatcgglg cgggctctct cgtctattac ccagclggcg aaaggggqat 300
gtgctgcagg gcgatctaat tgggtaacgc cagggttllc ccagtcnega cgttgtaaaa 360
cgacgguccg tgaattgaal ctagglgacn ctatagaaga gctalgaact cgcaltgcaq 420
cgtacgttaq ctlggatcct ctagagcggc cgcctactac tectaatlc gcggccgcgt 480
cgacglgggg tccncaactg gagagtggag agtgacatgt gctggacnct gtccatgaaq 540
cactgacagc aagctggagg cacaacgcnc cagacactca cagctactca ggaggctgag 600
aacaggttga acctgggagg tggaggttgc aatgagctga gatcaggccn ctgcncacca 660
gcctggatga cagagtgaas ctccatctta aaaaaaaaaa aaaaaa 706

```

&lt;210&gt; 450

&lt;211&gt; 493

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 450

```

gagacggagt gtcactctgt tgcccaggct ggagtgcagc aagacactgt ctaagaaaaa 60
acagttttta aaggtaaaac aacataaaaa gaaatatcct atagtggaaa taagagagtc 120
aaatgaggct gagaaactta caaaggagtc ttacagacat gtgcgaata tcaactgcag 180
agcctaagta taagaacaa ctttggggag aaccctcat ttgacagtga ggtacaaatc 240
caagtcagggt agtgaatagg gtggcaattaa actcaaatla atcctgccag ctgaaagcca 300
agagacactg tcagagagtl aaaaaagtgg ttctatccat ggggttqatc cccagttctc 360
tcagtcacac acatctgtga actcacagac caagttctla aacactggtt ccaactctgc 420
lacacatcag aatcacctgg agagctttac aaactcccat tgccgagggt cgacgcggcc 480
gcgaatttag tag 493

```

&lt;210&gt; 451

&lt;211&gt; 501

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(501)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 451

```

gggcgcgtcc cattcgccal tcaggctgcy caactgttgg gaagggcgat cggctgcgggc 60
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aacgccaggg ttttccagc cncgacgttg taaaacgacg gccagtgaat tgaatttagg 180
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&lt;211&gt; 51

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&lt;220&gt;

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144

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 452

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&lt;210&gt; 453

&lt;211&gt; 317

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

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&lt;222&gt; (1) ... (317)

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&lt;210&gt; 454

&lt;211&gt; 231

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 454

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&lt;210&gt; 455

&lt;211&gt; 231

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 455

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&lt;210&gt; 456

&lt;211&gt; 231

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 456

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&lt;210&gt; 457

&lt;211&gt; 231

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

145

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 <213> Homo sapiens

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146

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&lt;210&gt; 463

&lt;211&gt; 231

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 463

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&lt;210&gt; 464

&lt;211&gt; 231

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 464

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&lt;210&gt; 465

&lt;211&gt; 231

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 465

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&lt;210&gt; 466

&lt;211&gt; 231

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 466

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&lt;210&gt; 467

&lt;211&gt; 311

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 467

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&lt;211&gt; 3112



<212> DNA  
<213> Homo sapiens

<400> 468

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<212> DNA  
<213> Homo sapiens

&lt;400&gt; 469

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2229

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&lt;210&gt; 470

&lt;211&gt; 2426

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 470

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&lt;210&gt; 471

&lt;211&gt; 812

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 471

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gaacaaaatg agtaatgtta ttctacagtg tagaaaggtc acaqlacaga totggggaact 60
aaatattaaa aatgagtgtg gctggatata tggagautgt tgggcccaga aggaaccgta 120
gagatcagat attacancag ctttgttttg agggllagaa etelgeaatg atttgggttat 180
gaacgcacag tttaggcagc agggcccagaa tcttqccct ctgccnctg gttatctcct 240
cccagcttg gctgcctcat gtcactcag tattccattt tgtttgttgc atgtcttgtg 300
aagccatcaa qatlllclcg tclgtlllcc tctcatgggt aatgtcact ttgtgacttc 360
attcgaatc tgaatcccg ttcaaataaa tatccacaa aggatctgtt ttccctgccca 420
tcclltaagg aacacatcaa ttcattttct aatgtccttc cctcacaagc gggaccaggc 480
aaggggcgag gctcatcgat gacccaagat ggcggccggg catttctccc agggatctct 540
gttcltccct ttgtcttcc tgtgtgtgtg gatatttaaa ggggctggaa atgtgcaaaa 600
acatgtcact acttagacat tataattgtca tcttgcctgt tctagtgtg ttaattatct 660
ccatttcagc agatgtgtgg cctcagatgg taaagtcagc agcctttctt atttctcacc 720
tctgtatcat caggctcttc ccacatgca gatcttccctg gtctccctcg gctgcagcca 780
cacaatatct cctctgttt ttctgatgac ag 812

```

&lt;210&gt; 472

&lt;211&gt; 515

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; misc feature

&lt;222&gt; (1)...(515)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 472

```

acggagautt atttctgat attgtctgca tatgtatgtt tttaaagagtc tggaaatagt 60
cttatgactt tccatcaltg cttatttaata aataatacag ccagagagaag atgaaatgg 120
gttccagaat tattggtrct tgcagcccg tgaatctcag caagagggaac caccaactga 180
caatcaggat attgaacctg gacaagagag agaaggaaaca cctccgatcg aageacgtaa 240

```

150

```

agtagaagggt gattgccagg aaatggatct ggaaaagact cggagtgagc gtggagatgg 300
ctctgatqta aaagagaaga ctccacctaa tcttaagcat gctaaagacta aagaagcagg 360
agatgggcag ccatsagtta aaaagaagac aagctgaagc tacacacatg gctgatgtca 420
cattgaaaat gtgactgaaa atttgaatat tctctcaata aagtttgagt tttctctgaa 480
gaaaaaaanaa naaaaaaanaa aaaaaaanaa aaaaaa 515

```

&lt;210&gt; 473

&lt;211&gt; 750

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 473

```

Met Trp Asn Leu Leu His Glu Thr Asp Ser Ala Val Ala Thr Ala Arg
      5              10              15
Arg Pro Arg Trp Leu Cys Ala Gly Ala Leu Val Leu Ala Gly Gly Phe
      20              25              30
Phe Leu Leu Gly Phe Leu Phe Gly Trp Phe Ile Lys Ser Ser Asn Glu
      35              40              45
Ala Thr Asn Ile Thr Pro Lys His Asn Met Lys Ala Phe Leu Asp Glu
      50              55              60
Leu Lys Ala Glu Asn Ile Lys Lys Phe Leu Tyr Asn Phe Thr Gln Ile
      65              70              75              80
Pro His Leu Ala Gly Thr Glu Gln Asn Phe Gln Leu Ala Lys Gln Ile
      85              90              95
Gln Ser Gln Trp Lys Glu Phe Gly Leu Asp Ser Val Glu Leu Ala His
      100             105             110
Tyr Asp Val Leu Leu Ser Tyr Pro Asn Lys Thr His Pro Asn Tyr Ile
      115             120             125
Ser Ile Ile Asn Glu Asp Gly Asn Glu Ile Phe Asn Thr Ser Leu Phe
      130             135             140
Glu Pro Pro Pro Pro Gly Tyr Glu Asn Val Ser Asp Ile Val Pro Pro
      145             150             155             160
Phe Ser Ala Phe Ser Pro Gln Gly Met Pro Glu Gly Asp Leu Val Tyr
      165             170             175
Val Asn Tyr Ala Arg Thr Glu Asp Phe Phe Lys Leu Glu Arg Asp Met
      180             185             190
Lys Ile Asn Cys Ser Gly Lys Ile Val Ile Ala Arg Tyr Gly Lys Val
      195             200             205
Phe Arg Gly Asn Lys Val Lys Asn Ala Gln Leu Ala Gly Ala Lys Gly
      210             215             220
Val Ile Leu Tyr Ser Asp Pro Ala Asp Tyr Phe Ala Pro Gly Val Lys
      225             230             235             240
Ser Tyr Pro Asp Gly Trp Asn L u Pro Gly Gly Gly Val Gln Arg Gly
      245             250             255
Asn Ile Leu Asn Leu Asn Gly Ala Gly Asp Pro Leu Thr Pro Gly Tyr

```

260					265					270					
Pro	Ala	Asn	Glu	Tyr	Ala	Tyr	Arg	Arg	Gly	Ile	Ala	Glu	Ala	Val	Gly
	275						280					285			
Leu	Pro	Ser	Ile	Pro	Val	His	Pro	Ile	Gly	Tyr	Tyr	Asp	Ala	Gln	Lys
	290					295					300				
Leu	Leu	Glu	Lys	Met	Gly	Gly	Ser	Ala	Pro	Pro	Asp	Ser	Ser	Trp	Arg
	305				310					315					320
Gly	Ser	Leu	Lys	Val	Pro	Tyr	Asn	Val	Gly	Pro	Gly	Phe	Thr	Gly	Asn
				325					330					335	
Phe	Ser	Thr	Gln	Lys	Val	Lys	Met	His	Ile	His	Ser	Thr	Asn	Glu	Val
			340					345					350		
Thr	Arg	Ile	Tyr	Asn	Val	Ile	Gly	Thr	Leu	Arg	Gly	Ala	Val	Glu	Pro
		355					360					365			
Asp	Arg	Tyr	Val	Ile	Leu	Gly	Gly	His	Arg	Asp	Ser	Trp	Val	Phe	Gly
	370					375					380				
Gly	Ile	Asp	Pro	Gln	Ser	Gly	Ala	Ala	Val	Val	His	Glu	Ile	Val	Arg
	385				390					395					400
Ser	Phe	Gly	Thr	Leu	Lys	Lys	Glu	Gly	Trp	Arg	Pro	Arg	Arg	Thr	Ile
				405					410					415	
Leu	Phe	Ala	Ser	Trp	Asp	Ala	Glu	Glu	Phe	Gly	Leu	Leu	Gly	Ser	Thr
			420					425					430		
Glu	Trp	Ala	Glu	Glu	Asn	Ser	Arg	Leu	Leu	Gln	Glu	Arg	Gly	Val	Ala
		435					440					445			
Tyr	Ile	Asn	Ala	Asp	Ser	Ser	Ile	Glu	Gly	Asn	Tyr	Thr	Leu	Arg	Val
	450					455					460				
Asp	Cys	Thr	Pro	Leu	Met	Tyr	Ser	Leu	Val	His	Asn	Leu	Thr	Lys	Glu
	465				470					475					480
Leu	Lys	Ser	Pro	Asp	Glu	Gly	Phe	Glu	Gly	Lys	Ser	Leu	Tyr	Glu	Ser
				485					490					495	
Trp	Thr	Lys	Lys	Ser	Pro	Ser	Pro	Glu	Phe	Ser	Gly	Met	Pro	Arg	Ile
			500					505					510		
Ser	Lys	Leu	Gly	Ser	Gly	Asn	Asp	Phe	Glu	Val	Phe	Phe	Gln	Arg	Leu
		515					520					525			
Gly	Ile	Ala	Ser	Gly	Arg	Ala	Arg	Tyr	Thr	Lys	Asn	Trp	Glu	Thr	Asn
	530					535					540				
Lys	Phe	Ser	Gly	Tyr	Pro	Leu	Tyr	His	Ser	Val	Tyr	Glu	Thr	Tyr	Glu
	545				550					555					560
Leu	Val	Gln	Lys	Phe	Tyr	Asp	Pro	Met	Phe	Lys	Tyr	His	Leu	Thr	Val
				565					570					575	
Ala	Gln	Val	Arg	Gly	Gly	Met	Val	Phe	Glu	Leu	Ala	Asn	Ser	Ile	Val
			580					585					590		

152

Leu Pro Phe Asp Cys Arg Asp Tyr Ala Val Val Leu Arg Lys Tyr Ala  
 595 600 605  
 Asp Lys Ile Tyr Ser Ile Ser Met Lys His Pro Gln Glu Met Lys Thr  
 610 615 620  
 Tyr Ser Val Ser Phe Asp Ser Leu Phe Ser Ala Val Lys Asn Phe Thr  
 625 630 635 640  
 Glu Ile Ala Ser Lys Phe Ser Glu Arg Leu Gln Asp Phe Asp Lys Ser  
 645 650 655  
 Asn Pro Ile Val Leu Arg Met Met Asn Asp Gln Leu Met Phe Leu Glu  
 660 665 670  
 Arg Ala Phe Ile Asp Pro Leu Gly Leu Pro Asp Arg Pro Phe Tyr Arg  
 675 680 685  
 His Val Ile Tyr Ala Pro Ser Ser His Asn Lys Tyr Ala Gly Glu Ser  
 690 695 700  
 Phe Pro Gly Ile Tyr Asp Ala Leu Phe Asp Ile Glu Ser Lys Val Asp  
 705 710 715 720  
 Pro Ser Lys Ala Trp Gly Glu Val Lys Arg Gln Ile Tyr Val Ala Ala  
 725 730 735  
 Phe Thr Val Glu Ala Ala Ala Glu Thr Leu Ser Glu Val Ala  
 740 745 750

<210> 474  
 <211> 386  
 <212> PRT  
 <213> Homo sapiens

<400> 474  
 Met Arg Ala Ala Pro Leu Leu Leu Ala Arg Ala Ala Ser Leu Ser Leu  
 5 10 15  
 Gly Phe Leu Phe Leu Leu Phe Phe Trp Leu Asp Arg Ser Val Leu Ala  
 20 25 30  
 Lys Glu Leu Lys Phe Val Thr Leu Val Phe Arg His Gly Asp Arg Ser  
 35 40 45  
 Pro Ile Asp Thr Phe Pro Thr Asp Pro Ile Lys Glu Ser Ser Trp Pro  
 50 55 60  
 Gln Gly Phe Gly Gln Leu Thr Gln Leu Gly Met Glu Gln His Tyr Glu  
 65 70 75 80  
 Leu Gly Glu Tyr Ile Arg Lys Arg Tyr Arg Lys Phe Leu Asn Glu Ser  
 85 90 95  
 Tyr Lys His Glu Gln Val Tyr Ile Arg Ser Thr Asp Val Asp Arg Thr  
 100 105 110  
 Leu Met Ser Ala Met Thr Asn Leu Ala Ala Leu Phe Pro Pro Glu Gly  
 115 120 125  
 Val Ser Ile Trp Asn Pro Ile Leu Leu Trp Gln Pro Ile Pro Val His

153

130					135					140					
Thr	Val	Pro	Leu	Ser	Glu	Asp	Gln	Leu	Leu	Tyr	Leu	Pro	Phe	Arg	Asn
145					150					155					160
Cys	Pro	Arg	Phe	Gln	Glu	Leu	Glu	Ser	Glu	Thr	Leu	Lys	Ser	Glu	Glu
				165					170					175	
Phe	Gln	Lys	Arg	Leu	His	Pro	Tyr	Lys	Asp	Phe	Ile	Ala	Thr	Leu	Gly
			180					185					190		
Lys	Leu	Ser	Gly	Leu	His	Gly	Gln	Asp	Leu	Phe	Gly	Ile	Trp	Ser	Lys
		195					200					205			
Val	Tyr	Asp	Pro	Leu	Tyr	Cys	Glu	Ser	Val	His	Asn	Phe	Thr	Leu	Pro
	210					215					220				
Ser	Trp	Ala	Thr	Glu	Asp	Thr	Met	Thr	Lys	Leu	Arg	Glu	Leu	Ser	Glu
225					230					235					240
Leu	Ser	Leu	Leu	Ser	Leu	Tyr	Gly	Ile	His	Lys	Gln	Lys	Glu	Lys	Ser
				245					250					255	
Arg	Leu	Gln	Gly	Gly	Val	Leu	Val	Asn	Glu	Ile	Leu	Asn	His	Met	Lys
			260					265					270		
Arg	Ala	Thr	Gln	Ile	Pro	Ser	Tyr	Lys	Lys	Leu	Ile	Met	Tyr	Ser	Ala
		275					280					285			
His	Asp	Thr	Thr	Val	Ser	Gly	Leu	Gln	Met	Ala	Leu	Asp	Val	Tyr	Asn
	290					295					300				
Gly	Leu	Leu	Pro	Pro	Tyr	Ala	Ser	Cys	His	Leu	Thr	Glu	Leu	Tyr	Phe
305					310					315					320
Glu	Lys	Gly	Glu	Tyr	Phe	Val	Glu	Met	Tyr	Tyr	Arg	Asn	Glu	Thr	Gln
				325					330					335	
His	Glu	Pro	Tyr	Pro	Leu	Met	Leu	Pro	Gly	Cys	Ser	Pro	Ser	Cys	Pro
			340					345					350		
Leu	Glu	Arg	Phe	Ala	Glu	Leu	Val	Gly	Pro	Val	Ile	Pro	Gln	Asp	Trp
		355					360					365			
Ser	Thr	Glu	Cys	Met	Thr	Thr	Asn	Ser	His	Gln	Gly	Thr	Glu	Asp	Ser
	370					375					380				
Thr	Asp														
385															
<210> 475															
<211> 261															
<212> PRT															
<213> Homo sapiens															
<400> 475															
Met	Trp	Val	Pro	Val	Val	Phe	Leu	Thr	Leu	Ser	Val	Thr	Trp	Ile	Gly
				5					10					15	
Ala	Ala	Pro	L	u	Ile	Leu	Ser	Arg	Ile	Val	Gly	Gly	Trp	Glu	Cys
			20						25					30	





155

Val Ala Ser Arg Gly Arg Ala Val Cys Gly Gly Val Leu Val His Pro  
 50 55 60  
 Gln Trp Val Leu Thr Ala Ala His Cys Ile Arg Asn Lys Ser Val Ile  
 65 70 75 80  
 Leu Leu Gly Arg His Ser Leu Phe His Pro Glu Asp Thr Gly Gln Val  
 85 90 95  
 Phe Gln Val Ser His Ser Phe Pro His Pro Leu Tyr Asp Met Ser Leu  
 100 105 110  
 Leu Lys Asn Arg Phe Leu Arg Pro Gly Asp Asp Ser Ser His Asp Leu  
 115 120 125  
 Met Leu Leu Arg Leu Ser Glu Pro Ala Glu Leu Thr Asp Ala Val Lys  
 130 135 140  
 Val Met Asp Leu Pro Thr Gln Glu Pro Ala Leu Gly Thr Thr Cys Tyr  
 145 150 155 160  
 Ala Ser Gly Trp Gly Ser Ile Glu Pro Glu Glu Phe Leu Thr Pro Lys  
 165 170 175  
 Lys Leu Gln Cys Val Asp Leu His Val Ile Ser Asn Asp Val Cys Ala  
 180 185 190  
 Gln Val His Pro Gln Lys Val Thr Lys Phe Met Leu Cys Ala Gly Arg  
 195 200 205  
 Trp Thr Gly Gly Lys Ser Thr Cys Ser Gly Asp Ser Gly Gly Pro Leu  
 210 215 220  
 Val Cys Asn Gly Val Leu Gln Gly Ile Thr Ser Trp Gly Ser Glu Pro  
 225 230 235 240  
 Cys Ala Leu Pro Glu Arg Pro Ser Leu Tyr Thr Lys Val Val His Tyr  
 245 250 255  
 Arg Lys Trp Ile Lys Asp Thr Ile Val Ala Asn Pro Gly Ser Met Ala  
 260 265 270  
 Thr Ala Gly Asn Pro Trp Gly Trp Phe Leu Gly Tyr Leu Ile Leu Gly  
 275 280 285  
 Val Ala Gly Ser Leu Val Ser Gly Ser Cys Ser Gln Ile Ile Asn Gly  
 290 295 300  
 Glu Asp Cys Ser Pro His Ser Gln Pro Trp Gln Ala Ala Leu Val Met  
 305 310 315 320  
 Glu Asn Glu Leu Phe Cys Ser Gly Val Leu Val His Pro Gln Trp Val  
 325 330 335  
 Leu Ser Ala Ala His Cys Phe Gln Asn Ser Tyr Thr Ile Gly Leu Gly  
 340 345 350  
 Leu His S r Leu Glu Ala Asp Gln Glu Pro Gly Ser Gln Met val Glu  
 355 360 365  
 Ala S r Leu Ser Val Arg His Pro Glu Tyr Asn Arg Pro Leu L u Ala  
 370 375 380

## 156

Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser Glu Ser Asp  
 385 390 395 400  
 Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr Ala Gly Asn  
 405 410 415  
 Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Gly Arg Met Pro  
 420 425 430  
 Thr Val Leu Gln Cys Val Asn Val Ser Val Val Ser Glu Glu Val Cys  
 435 440 445  
 Ser Lys Leu Tyr Asp Pro Leu Tyr His Pro Ser Met Phe Cys Ala Gly  
 450 455 460  
 Gly Gly Gln Asp Gln Lys Asp Ser Cys Asn Gly Asp Ser Gly Gly Pro  
 465 470 475 480  
 Leu Ile Cys Asn Gly Tyr Leu Gln Gly Leu Val Ser Phe Gly Lys Ala  
 485 490 495  
 Pro Cys Gly Gln Val Gly Val Pro Gly Val Tyr Thr Asn Leu Cys Lys  
 500 505 510  
 Phe Thr Glu Trp Ile Glu Lys Thr Val Gln Ala Ser Glu Phe Met Val  
 515 520 525  
 Gln Arg Leu Trp Val Ser Arg Leu Leu Arg His Arg Lys Ala Gln Leu  
 530 535 540  
 Leu Leu Val Asn Leu Leu Thr Phe Gly Leu Glu Val Cys Leu Ala Ala  
 545 550 555 560  
 Gly Ile Thr Tyr Val Pro Pro Leu Leu Leu Glu Val Gly Val Glu Glu  
 565 570 575  
 Lys Phe Met Thr Met Val Leu Gly Ile Gly Pro Val Leu Gly Leu Val  
 580 585 590  
 Cys Val Pro Leu Leu Gly Ser Ala Ser Asp His Trp Arg Gly Arg Tyr  
 595 600 605  
 Gly Arg Arg Arg Pro Phe Ile Trp Ala Leu Ser Leu Gly Ile Leu Leu  
 610 615 620  
 Ser Leu Phe Leu Ile Pro Arg Ala Gly Trp Leu Ala Gly Leu Leu Cys  
 625 630 635 640  
 Pro Asp Pro Arg Pro Leu Glu Leu Ala Leu Leu Ile Leu Gly Val Gly  
 645 650 655  
 Leu Leu Asp Phe Cys Gly Gln Val Cys Phe Thr Pro Leu Glu Ala Leu  
 660 665 670  
 Leu Ser Asp Leu Phe Arg Asp Pro Asp His Cys Arg Gln Ala Tyr Ser  
 675 680 685  
 Val Tyr Ala Phe Met Il Ser Leu Gly Gly Cys Leu Gly Tyr Leu Leu  
 690 695 700  
 Pro Ala Ile Asp Trp Asp Thr Ser Ala Leu Ala Pro Tyr Leu Gly Thr

157

705	710	715	720
Gln Glu Glu Cys Leu Phe Gly Leu Leu Thr Leu Ile Phe Leu Thr Cys			
725		730	735
Val Ala Ala Thr Leu Leu Val Ala Glu Glu Ala Ala Leu Gly Pro Thr			
740	745	750	
Glu Pro Ala Glu Gly Leu Ser Ala Pro Ser Leu Ser Pro His Cys Cys			
755	760	765	
Pro Cys Arg Ala Arg Leu Ala Phe Arg Asn Leu Gly Ala Leu Leu Pro			
770	775	780	
Arg Leu His Gln Leu Cys Cys Arg Met Pro Arg Thr Leu Arg Arg Leu			
785	790	795	800
Phe Val Ala Glu Leu Cys Ser Trp Met Ala Leu Met Thr Phe Thr Leu			
805	810	815	
Phe Tyr Thr Asp Phe Val Gly Glu Gly Leu Tyr Gln Gly Val Pro Arg			
820	825	830	
Ala Glu Pro Gly Thr Glu Ala Arg Arg His Tyr Asp Glu Gly Val Arg			
835	840	845	
Met Gly Ser Leu Gly Leu Phe Leu Gln Cys Ala Ile Ser Leu Val Phe			
850	855	860	
Ser Leu Val Met Asp Arg Leu Val Gln Arg Phe Gly Thr Arg Ala Val			
865	870	875	880
Tyr Leu Ala Ser Val Ala Ala Phe Pro Val Ala Ala Gly Ala Thr Cys			
885	890	895	
Leu Ser His Ser Val Ala Val Val Thr Ala Ser Ala Ala Leu Thr Gly			
900	905	910	
Phe Thr Phe Ser Ala Leu Gln Ile Leu Pro Tyr Thr Leu Ala Ser Leu			
915	920	925	
Tyr His Arg Glu Lys Gln Val Phe Leu Pro Lys Tyr Arg Gly Asp Thr			
930	935	940	
Gly Gly Ala Ser Ser Glu Asp Ser Leu Met Thr Ser Phe Leu Pro Gly			
945	950	955	960
Pro Lys Pro Gly Ala Pro Phe Pro Asn Gly His Val Gly Ala Gly Gly			
965	970	975	
Ser Gly Leu Leu Pro Pro Pro Pro Ala Leu Cys Gly Ala Ser Ala Cys			
980	985	990	
Asp Val Ser Val Arg Val Val Val Gly Glu Pro Thr Glu Ala Arg Val			
995	1000	1005	
Val Pro Gly Arg Gly Ile Cys Leu Asp Leu Ala Ile Leu Asp Ser Ala			
1010	1015	1020	
Phe Leu Leu S r Gln Val Ala Pro Ser Leu Phe Met Gly Ser Ile Val			
1025	1030	1035	1040

158

Gln Leu Ser Gln Ser Val Thr Ala Tyr Met Val Ser Ala Ala Gly Leu  
1045 1050 1055

Gly Leu Val Ala Ile Tyr Phe Ala Thr Gln Val Val Phe Asp Lys Ser  
1060 1065 1070

Asp Leu Ala Lys Tyr Ser Ala  
1075